THE AMERICAN RIFLEMAN

Peter Peepsight PLANS A PICK-UP

LOOK AT PEEPSIGHT OUT ON THE FIRING LINE – CRAWLING AROUND ON HIS HANDS AND KNEES. LOOKS LIKE HE LOST HIS LAST DIME
WONDER IF THIS IS ANOTHER OF HIS NEW PRONE-SITTING POSITIONS?
MAYBE HE'S PLANTING A VICTORY GARDEN
HE MUST BE LOOKING FOR THAT FIVE HE DROPPED IN THE INTER-CLUB MATCH LAST YEAR
WHAT FIVE WAS THAT – THE BILL AT THE BAR, OR THE BULL AT THE BUTTS?
LOOKING FOR BURIED TREASURE, PETER?
FOR ONCE YOU PIRATES GUESSED RIGHT. I'VE BEEN PICKING UP EMPTY BRASS THAT'S BEEN OVERLOOKED. I BET THERE'S A SACK OF IT RIGHT HERE ON THE LINE
WE CAN DO A REAL SERVICE BY SAVING ALL OUR EMPTIES AND TURNING THE SCRAP BRASS IN TO OUR LOCAL SCRAP COLLECTION DEPOTS
I HEAR THEY RE-PROCESS IT AND SEND IT BACK TO THE AMMUNITION MAKERS LIKE PETERS, WHO ARE WORKING 100% FOR OUR ARMED FORCES
IN OTHER WORDS, LET'S ALL HELP PUT VICTORY IN THE BAG
4
3
1

PETERS Rifle and Pistol Ammunition

PETERS CARTRIDGE DIVISION, *Remington Arms Co., Inc., Bridgeport, Conn.*

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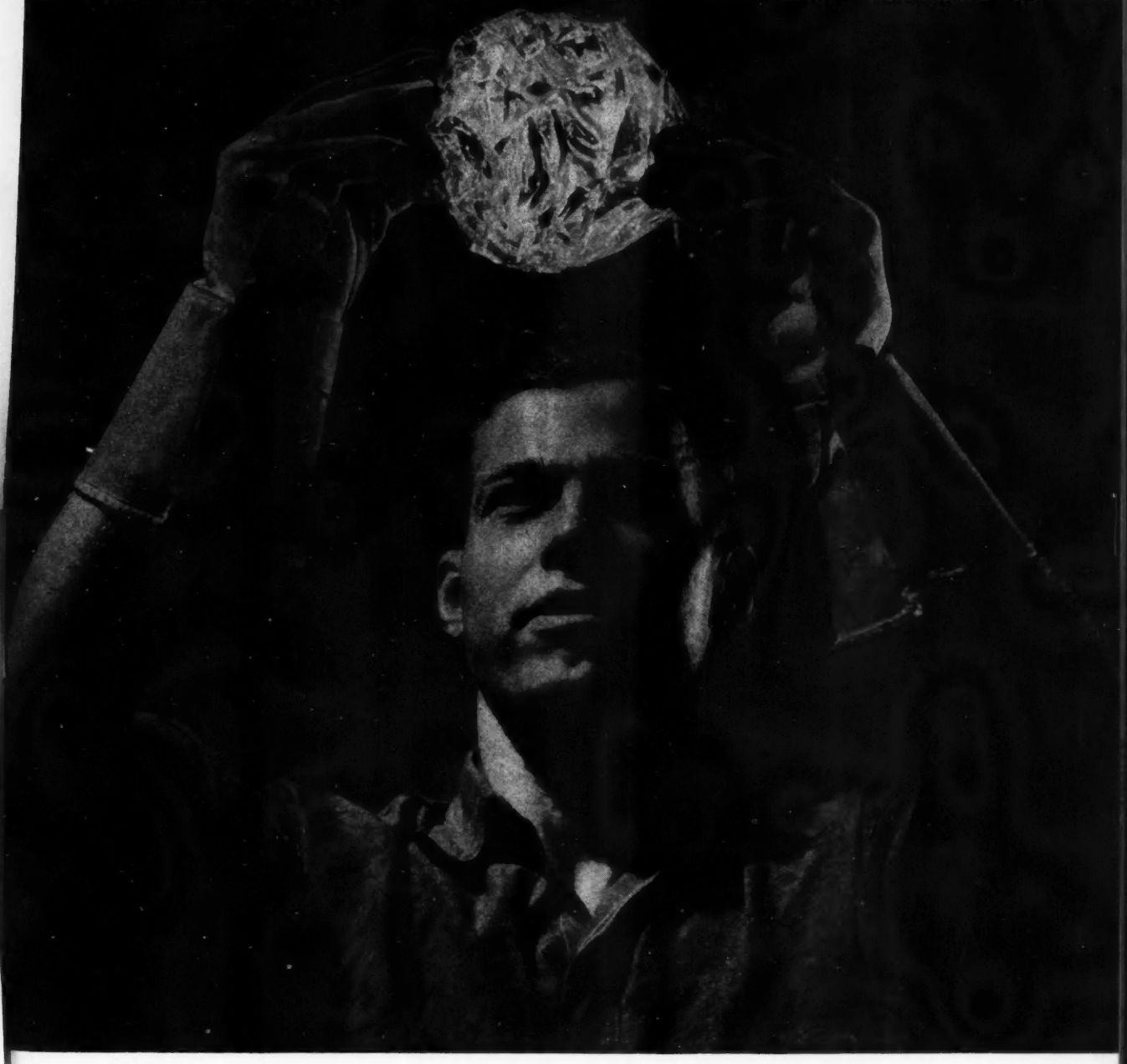

This is an "Optical" War

ARMY E NAVY

Pete Miller, glass inspector, is pleased with that chunk of precious optical glass. He knows this is an optical war. He knows that accurate gunfire control depends upon optical glass . . . flawless and crystal-clear.

But Pete Miller is not thinking of his skill as a glassmaker at Bausch & Lomb. In that glass he sees his friends at gunfire-control stations on battle cruisers, in the turrets of tanks roaring down on an enemy position, or making aerial photographs behind enemy lines. And always he sees them peering into the sights of a Bausch & Lomb optical instrument.

The glass Pete Miller holds was made to a special formula. It will be ground and polished to become part of the prisms for an Anti-Aircraft height finder. As fighting Americans dial this instrument into focus, guns automatically will be brought to bear on enemy planes with deadly accuracy.

Yet this is but one of dozens of types of Bausch & Lomb glass, made to meet exacting optical specifications. Bausch & Lomb glass is also required in the optical systems of binoculars, range finders, microscopes, colorimeters, refractometers, metallographic and spectrographic equipment and scores of other products.

The Bausch & Lomb optical glass plant was born fighting—developed at headlong speed during World War I to make this country forever free from foreign sources. Operated by men like Miller, guided by researchers and technicians, this plant today makes possible the amazing effectiveness of thousands of scientific instruments.

BAUSCH & LOMB

OPTICAL CO. ROCHESTER, N.Y.

ESTABLISHED 1853

AN AMERICAN SCIENTIFIC INSTITUTION PRODUCING OPTICAL GLASS AND INSTRUMENTS FOR MILITARY USE, EDUCATION, RESEARCH, INDUSTRY AND EYESIGHT CORRECTION

We Are Sorry . . .

★ ★ ★ To announce that this is the LAST issue of The AMERICAN RIFLEMAN that will be available to sportsmen who have been buying the magazine on newsstands or in sporting goods stores.

In order to comply with the government's paper cut order, we are compelled to make some drastic changes with respect to printing and distributing The AMERICAN RIFLEMAN. We had hoped that savings in paper effected by printing the magazine on a lighter paper stock would be sufficient to meet the government's order, but we are sorry to learn that this is not going to be the case.

So, effective with this issue, we will have to discontinue our popular dealer plan, which made available The AMERICAN RIFLEMAN for over-the-counter sales. For the duration of the war circulation must be limited to individual subscriptions.

Needless to say, we regret the necessity for temporarily curtailing this excellent circulation. However, this is war and we are doing the best we can with what we can get to keep the wheels turning.

★ ★ ★ If the situation gets worse before it improves N. R. A. may have to ration individual subscriptions. So to be sure of your regular monthly visits of this leading firearms magazine, we urge you to use the enclosed order card to JOIN or REJOIN.

Follow the Arrow to the Handy Order Card

LT. RAWLINGSON'S

One Shot

IN GREECE, a weary British rearguard slogs over a bridge of the Corinth Canal. Engineers remain to lay demolition charges. Before they can be fired, German parachutists shower down, seize the bridge. Engineer Lt. Rawlingson escapes, hides in a hole. The Germans search frantically for the hidden TNT. Suddenly, Rawlingson spies one of the distant detonators—no larger than a cigarette, hanging by the connecting wire against the gray stone of the bridge. Raising his rifle, he sights carefully—fires! A deafening roar. Bridge and Germans fall, a tangled mass, into the Canal. The British trudge on toward their ships—*saved by a rifleman.* (This is a true story, except for the rifleman's name, from the September 1942 issue of The American Rifleman.)

EVER SINCE rifling turned guns into deadly precision instruments, the trained rifleman has been the backbone of the army.

Our own history, especially, has been the history of men who shot faster and straighter than their foes. But America is no longer "a nation of marksmen"—*less than 2% of inductees know anything about rifle arms.* That is why fire-arms manufacturer O. F. Mossberg & Sons, Inc. urges *all* owners of .22 calibre rifles to . . .

Share your rifle with your neighbor

Under the nationwide Training Program sponsored by the National Rifle Association, Washington, D.C.

This program trains *qualified men* in the use of small arms. It is invaluable to civilian defense units, guards, etc., and to *all* prospective service men. Even quartermasters, signal corps and cooks are armed—and must learn how to shoot—in *this* war. And the basic principles of aiming and trigger release are the same for riflemen, artillerymen, pursuit pilots and bombardiers.

So . . . share your rifle with your neighbor, under the NRA training program. Help teach patriotic boys—and men—how to use a gun. Ammunition is made available through the National Rifle Ass'n. *Join, or start,* a local rifle club—*now!*

Take a *real step* toward making America, once more, a nation of marksmen—*unconquerable!* Mail the coupon for helpful, free booklets—today.

O. F. Mossberg and Sons, INC.

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O. F. Mossberg and Sons, Inc. 3255 St. John St., New Haven, Conn. *Check booklets desired*

Please send my copy of "The Guidebook to Rifle Marksmanship." ☐

Please send me the N. R. A. booklet on how to organize and conduct a shooting club. ☐

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Division of Western Cartridge Company

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Indians everywhere—natural-born hunters—prized Winchester rifles above everything else. Their greatest ambition was to own one and they would do anything to obtain it. If not by trade, by violence or war.

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RIFLES AND SHOTGUNS • CARTRIDGES AND SHOTSHELLS • FLASHLIGHTS AND FLASHLIGHT BATTERIES

The *Official Journal of The National Rifle Association of America*

AMERICAN RIFLEMAN

C. B. LISTER, *Managing Editor*
F. C. NESS, *Technical Editor*
L. Q. BRADLEY, *Circulation*

W. F. SHADEL, *Editor*
F. C. DANIEL, *Advertising*
J. T. BERRYMAN, *Art Director*

THE COVER: A fighter plane is a super-accurate automatic pistol; the effective fighter pilot, a deadly marksman, as true of aim and quick on the draw as an oldtime western gunman. With this rather new concept in mind, we teamed up the cover illustration with our lead story, "Sky Sniper", and appropriately for the RIFLEMAN, we think. For here, among these fighter pilots, are men who put a premium on marksmanship. The flier who can't shoot is as useless as a shooter who can't fly.

Official U. S. Navy Kodachrome.

THIS MONTH:

Lt. Stuart D. Ludlum, USNR, authoring "Sky Sniper" in this issue, gives us a new appreciation of the fighter pilot's technique in light of small arms training. Undoubtedly, because of his former target shooting interests as a member of the Manhattan Rifle and Revolver Club, the Lieutenant was much impressed with the transfer of training from small arms to aerial gunnery, as soon as he was assigned to the Navy's Bureau of Aeronautics to work on training literature and films.

Walter McCallum, who writes on "Booby Traps", is a correspondent for a prominent Washington paper whose assignment these days calls for extensive travel to the leading Army, Navy training centers, covering all types of warfare. His newspaper series has shown an understanding of ordnance as well as tactics, and also the limitations of censorship. His contribution to this issue is marked by just such sympathetic handling of a subject about which the civilian hears a great deal but is afforded little appreciation.

E. Baden Powell, in his serial starting this month on "Killing Power", contributes his observations and tests of many years to a subject which holds great interest for the student of ballistics, or for that matter, the rifleman-hunter who wants to make clean kills. Mr. Powell is a scientist of note, who turned to the study of small arms projectiles and their killing effect as a spare time project but which, as he says, became his ministry, "fostered by powerful emotions while a youth, at the spectacle of scores of suffering wounded animals shot with bullets possessing insufficient killing power; and later, by a desire to conserve game by reduction of loss of wounded animals certain to die."

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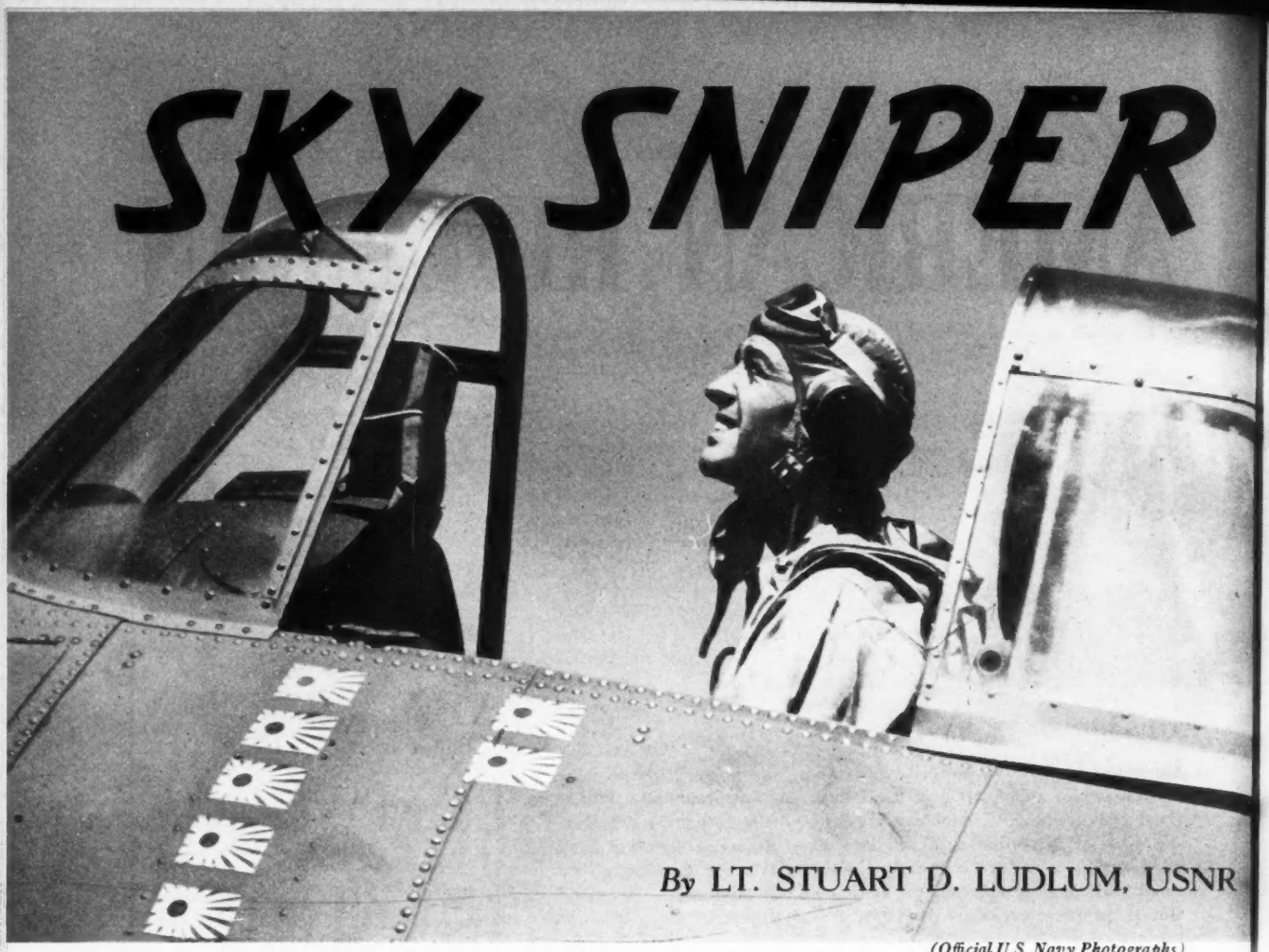
SKY SNIPER



By LT. STUART D. LUDLUM, USNR

(Official U.S. Navy Photographs)

HE LEARNED TO SHOOT STRAIGHT WHEN HE WAS ONLY A LAD. AND THOSE SEVEN JAP FLAGS DON'T EVEN BEGIN TO TELL HOW MUCH THAT NOW MEANS TO AMERICA—

"DON'T SHOOT AT THE QUAIL. Shoot where he's going to be when the shot gets there." Though the shotgun's recoil rattled his teeth and rocked him on his heels, little Jimmy Thach learned to swing smoothly and to shoot without flinching. He learned *lead* and *follow through* so that he could put a single .22 bullet out in front "where the rabbit is going to be" and send it rolling into a pie pan. Whether wing shooting or depending on one slug to do the work of a hatful, Jim Thach put a premium on marksmanship.

Six Grumman Wildcats roar off the flight deck, wheel into the sky and climb like express elevators. Lt. Commander John Smith (Jim) Thach, now Skipper of Fighter Three, and his wingman spot a Jap four-engine patrol plane. He starts his run. It's like the last rapid fire string in the National Match Course . . . only the target's shooting back. Smooth speed . . . rhythm . . . every maneuver sheer velvet . . . no jerking . . . no flinching. Working together in perfect coordination, his hands and feet line up his ringsight on the target and then move it out front. The "pipper" (the dot in the middle of the ringsight) is leading perfectly. He presses the trigger and breaks away. A few brief seconds and the smoking Jap plunges into the sea.

Minutes later another two-plane section, led by Lt. O. B. Stanley, shoots down another patrol bomber.

Toward mid-afternoon, enemy planes are reported. Two more fighter patrols hop off the carrier into the sky to intercept.

Here's the chance Fighter Three has been waiting for. . . . Has Jimmy taught them well? Are his sky-shooting ideas sound? These air borne marksmen have never been in combat before. . . . They believe in Jimmy Thatch and his shooting ideas, but, after all, they're only ideas . . .

At 1630 (Navy for 4:30 p. m.) nine Mitsubishi bombers streak for the carrier. This is it! All those hours of attacks, and runs, and marksmanship practice are now to be put to the test. The flying shooters of Fighter Three —like well-trained riflemen in their first visit to Camp Perry—following the detailed instructions of their coach, resisting the excitement that could easily upset their technique—smoothly swing their three-ton flying guns into position. They press the triggers. Five Jap bombers crash into the sea. The other four release their bombs far from their target, miss it by nearly two miles, and

head hell-bent for home. One is blasted by the antiaircraft sharpshooters on the carrier. Three are given "the treatment" and are confirmed. . . . One gets away.

A second flight of Jap bombers is detected coming in from the east. Only two fighters are in position to intercept. They pile into the nine bombers and in the next few minutes one of the great fights of all time takes place. It's history now, but there are angles for those who are interested in skillful marksmanship.

The guns of one plane jam. He has to leave and quick. The other makes his approach, and many things race through his mind. Very little ammunition for such a big covey. A bomber takes a lot of shooting to put it out . . . you got to hit it where it hurts . . . deep in the heart of the X-ring. And you can't take too many chances when you are the last man between the bandits and the carrier. . . . If they sink the carrier, where you going to land? Ever think of that? So you've got to make every shot count without "expending" yourself.

Judge your range . . . their speed . . . start your run . . . bank smoothly . . . everything's got to be done smoothly . . . can't black yourself out with a fast or jerky turn and expect to hold and squeeze. Lead just right. . . . Press! Smoke and flames say, "Pinwheel", and now the next one! Working from back to front of the Vee, the pipper lines up just where it ought to be . . . press . . . smoke . . . flames . . . crazy spin into the sea. Next!! Climb for another run . . . a short burst this time. . . . Break away. . . . Next!

". . . Without hesitation, alone and unaided, he repeatedly attacked this enemy formation at close range in the face of their intense combined machine gun and cannon fire, and . . . by his gallant and courageous action, his extremely skillful marksmanship, making the most of every shot of his limited amount of ammunition, shot down five enemy bombers and severely damaged a sixth before they reached the bomb release point . . ."

So reads the citation that went with Butch O'Hare's Congressional Medal of Honor. Courage, shooting skill . . . and sky sniping marksmanship, drilled into him by Jimmy Thach, made O'Hare one of the world's most skillful flying fighters.

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We lost two fighter planes and one pilot.

Fighter Three won its first brush with the Japs in the cornfields of Arkansas . . . on the rifle ranges and the hardwood ridges of the Mid-West. Uncle Sam owes a lot to the man who taught his son to shoot where his target is going to be and not where it is when you pull the trigger. Jim Thach's dad did a lot more than give his son a taste for outdoor life . . . instill in him a love for guns . . . and the thrill of hunting. He taught him to respect and aspire to skill in marksmanship.

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Thach's fighting teammates were high over the Lexington when she took this direct hit. Smoke on the water marks the spots where their Jap victims have crashed

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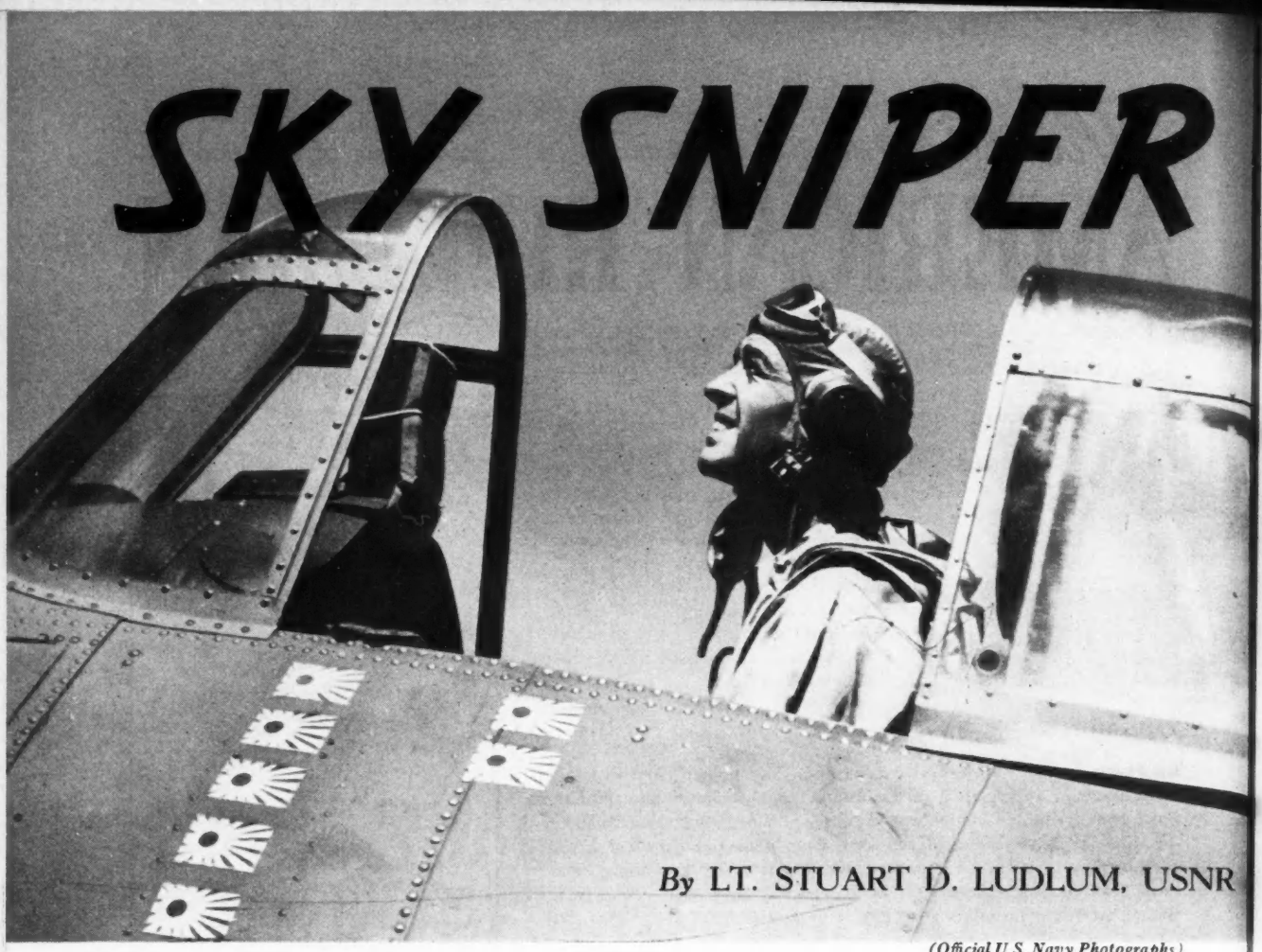

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knowledge served him well in his later air battles. For when he was fighting his squadron high above the ships, he knew pretty well what they were trying to do below.

In 1929 he was ordered to Pensacola for flight training, and his enthusiasm went into "high" when it came to aerial gunnery. He hadn't lost his love for cracking moving targets, and here it was at its best, shooting a flying target with a flying gun.

When a student officer is learning to fly, he wants those wings more than anything else on earth or in the air. But once he wins them and is attached to a fighter squadron, he wants a little painted "E" on his plane. This is the badge of an expert aerial marksman. Once Jim was out with the Fleet as a Naval Aviator, it didn't take him long to win his "E". He soon found that he couldn't flinch a plane and hit his X-ring anymore than he could hit it when he flinched with a rifle. On the other hand, when he swung smoothly, led and followed through, his scores mounted.

Even before Fighter Three proved the effectiveness of Jim's methods by killing Japs wholesale, the Navy began to take notice. He received a letter of commendation for excellence in gunnery operations in 1939-1940: "For exceptional skill and technique in aerial gunnery and bombing, efficient and meticulous operation of the squadron gunnery department; marked ability to train other pilots in fighting plane tactics and gunnery." It was encouraging that the Navy recognized and appreciated the need for fliers who could shoot. In his Navy Cross and Distinguished Service Medal citations, his skill as a marksman is emphasized: ". . . Through his courage and skill he shot down one enemy bomber and, with the assistance of his teammates, shot down a second bomber."

". . . Pursuing the bold and fearless tactics of a great fighter and skillful airman, Lieutenant Commander Thach led a division of his squadron on a mission providing protection for our own attacking torpedo squadron. Facing intense antiaircraft fire, the squadron under his command efficiently attacked an overwhelming number of enemy Japanese fighters, shooting down three of them."

"Skippers" of VF-3 (Jim Thach, foreground and Butch O'Hare) flying a two plane section in their Grumman Wildcats

After various aviation assignments with fighter and patrol squadrons, Jim found himself Gunnery Officer of Fighter Three, which immediately won the Championship of the Fleet in Marksmanship. A year before Pearl Harbor, Jim was made Skipper of the squadron, and even though his men were the shooting champs, he was dissatisfied. He wanted more time for training. He was developing fighting tactics that were based on sound shooting techniques. He believed that a flier who couldn't shoot would be just as useless to a fighting squadron as a shooter who couldn't fly. He, himself, was expert in both and was working out a way to coordinate them—to blend them with team-flying—and to come out with a fighting formula that was 4-0, which in the Navy is perfection.

Everything seemed to conspire against him, however. "Bugs" arose in the planes and they were grounded. When they were rarin' to go, the carrier was diverted to ferrying Army bombers to the islands of the Pacific. In June, 1941, he did get thirty days at Pearl Harbor with his squadron, and those thirty days, Saturdays and Sundays included, were spent in the air, shooting. They got results.

A fighter plane is a super-accurate automatic pistol. It shoots with fixed guns. The air pressure against the wings, at speeds between 300 and 400 miles an hour, holds the guns and gives machine-rest steadiness. Like a pistol compared with a long arm, it's highly maneuverable. You can aim it with one hand. Like the .45 Automatic, its bullets are the punchy kind. A burst of concentrated fire from a Grumman Wildcat's "fifties" has a most satisfactory way of messing things up—for the enemy—like slugging a clip of forty-fives into a can of tomatoes —before point rationing.

If you load a fighting plane down with extra ammunition or fuel, armament or armor, or other equipment, it's like hanging a big magazine or a heavy sight ramp or curvaceous grips on a handgun. It loses its ability to gain altitude advantage quickly just as the pistol loses its quick-draw, fast-pointing attributes. Fortunately, the United States Navy has long recognized the principles of fighter combat and has given our fighter squadrons some mighty handy flying guns that have proven themselves highly effective in a devastating sort of way.

The seven Jap flags, painted on Jim Thach's plane, are convincing proof that he has acquired the knack of knocking Japs out of the sky. But his skills are more far-reaching, for he possesses qualities of leadership and the ability to teach. He has taught his fighter combat tactics to other Navy squadrons and is now supervising the making of training films at the Walt Disney studios and at the Navy's gigantic training center in Jacksonville. These films are being used to make lethal marksmen out of the thousands of pilots the Navy is training every year.

In any kind of shooting it is hard to say how much skill is due to inherent ability and how much to teaching. O'Hare was a good rifle shot before he learned to fly. But he and the other pilots of VF-3 (Fighting Squadron Three) give most credit to Thach's shooting tactics.

Lieutenant Noel Gayler was another one of Thach's sky snipers who did his Skipper proud. Thach likes to tell about the time they escorted dive and torpedo bombers over the unexplored mountains of New Guinea, one of the most hazardous flights in Naval aviation. As they pushed their heavy planes up into the thin air around the tops of these amazingly high peaks, it looked as though they just weren't going to make it. They began to lose altitude at the rate of 600 feet a minute. Their Skipper, however, soon found a green flat area. He led his planes over it, caught the warm updrafts he was hoping to find there and rode them over the passes with less than ten feet to spare. That's not very much leeway when you're sitting on top of a ton torpedo that has plenty of whang in its warhead.

Jim Thach congratulates Butch O'Hare for shooting down five Jap bombers in first day Thach's theories were put to test

"For exceptionally meritorious service to the Government of the United States as Commander of a carrier Fighting Squadron during the first six months of the war. The remarkable quality of leadership displayed by Lieutenant Commander Thach was exemplified in the thorough and comprehensive training of his pilots in both their brilliant combat tactics and excellent gunnery. The resultant high state of combat efficiency attained by his squadron enabled it to play a decisive and major part in the destruction of nineteen of the twenty enemy Japanese bombers which attacked an aircraft carrier on February 20, 1942, and to make an essential contribution to the success of the air attack on Salamaua and Lae, New Guinea on March 10, 1942. The effectiveness of his unique system of fighting plane combat teams, evolved from a detailed study of action reports of the Coral Sea Battle and taught not only to his own pilots but to all of the fighting squadrons in the Hawaiian area, was demonstrated north of Midway Island on June 4, 1942. In this engagement, Lieutenant Commander Thach led a four-plane division of fighter planes from his squadron against twenty enemy Zero fighters during the successful attacks by our carrier-based planes against enemy carriers, destroyed six enemy fighters and repulsed the others with the loss of only one of his four planes."

When they finally did get over and were pummeling ships and land installations at Lae and Salamaua, Gayler was on his way down in a strafing dive when, out of the corner of his eye, he spotted a Jap seaplane. He nosed up just long enough to center a burst and send the Jap down in flames. Then he continued his dive. This was a rather deft bit of snap-shooting.

Another time a Zero was trying to tease Gayler into a trap. Zeros are very light and can climb faster than 4000 feet a minute. They try to get you to follow them up. If you do, they climb out of your range, roll over when you are far below and come tobogganing back at you when you're hanging on your prop, a "duck soup" target. But Gayler wasn't tricked. He anticipated the pull-up and gave the Jap a burst just as he began to climb. He didn't. He burned instead.

Gayler pulled another "quick draw" when a swarm of Zeros had him ducking in and out of a cloud. Every time he poked his nose out, they were waiting for him. Back in he went.

"I came out one side," he explains, "and saw a Jappie below me. He saw me and made that instinctive pull-up right in front of my guns. I let him have a burst. He burned, too."

On the way back to his carrier Gayler shot down two more Zeros, just to clear his guns before landing. These two brought his total to eight clean kills.

Every marksman in America, every shooter who knows the future of our country depends on our ability to shoot straight as individuals—whether we have in our hands a six pound sub-machine gun or a ten thousand pound flying automatic—will find in the wording of Jim Thach's Distinguished Service Medal citation, Official America's awakening to the priceless value of shooting "know how".

Booby Traps

By WALTER McCALLUM

These devilish devices are destined to play a big part in this war. They won't win it but they will hold up advances on all fronts. That's why our own engineers are now mastering the old while devising the new

". . . the American soldier is learning about the tricky business. He doesn't pick up books or souvenirs . . . in fact he doesn't do much of anything in any structure abandoned by the enemy."

THE AMERICAN SOLDIER is a gent with a lot of savvy. He picks up the tricks of battle quickly and he doesn't fool when he plays for keeps. But having done a lot of playing in his youth, he has developed a capacity for tricking the other fellow. It helps now in jungle warfare where the tricky Jap is learning that the American is a damned sight better man. But it reaches its zenith (this tricky business) in this ingenious job of locating and setting booby traps and mines where the enemy won't find them and will be blown to whatever hell awaits the German and the Jap.

More and more dispatches from the combat areas bring the news, usually tucked away down in the meat of the story, that booby traps held up the advance of our troops. There isn't much doubt that booby traps of all kinds are playing and are destined to play a big part in this war. They won't win it or come close, but they will kill a lot of men and hold up advances on all fronts.

Even when you locate booby traps, you still have to pull their fangs; in Army parlance "deactivate" them. The men know how much nicer it is to sleep in the mud and rain than to ascend swiftly on the wings of an enemy-set booby trap toward the soldier's Valhalla.

All over the training areas in this country where the American soldier is learning to do battle (and in advanced training areas nearer the fighting fronts) men are learning the how and why of booby traps. Most battle courses in the training areas have them. They are standard now in the training of American troops. Setting them so they will do the utmost damage to the enemy, and finding and deactivating the infernal devices is one of the big jobs of the engineers. Every man who goes through an engineer replacement training center goes through a course in booby traps. He comes out with a healthy respect for the devilish devices, and with a pretty thorough knowledge of what they are, where they can be placed to do the most harm to the enemy, and about what to expect in the way of traps placed by the enemy.

The Germans are past masters in the art of placing and hiding booby traps, of duplicating the installations, canalizing approaches, setting them in unsuspected spots, but the American soldier, no booby himself, is getting better. Soon he'll be able to teach Heinie and his killers some new wrinkles that never emanated from Berlin.

Booby traps should be given complete study by home defense troops in this country. If enemy forces invaded the United States and established a bridgehead, home defense troops could accomplish much delaying action by planting them, giving organized defense forces time to mobilize. A perfect instrument for guerrilla warfare, the booby trap can be a major delaying item. Clever, resourceful men can construct them from materials found almost anywhere, even though the enemy has seized their firearms. The American soldier is taught to use his own ingenuity in their placement and camouflage.

One of the main ideas of the booby trap is to toss the enemy off balance and keep him there, hanging on the ropes until bigger stuff can be brought along for the knockout punch. A jittery enemy is an enemy already on the road to a first-class licking. While the booby trap won't kill enemy personnel in great numbers, it will kill enough to make the rest afraid to step anywhere or to pick up anything. The slowing down and hampering effects are obvious, just as they have been in North Africa.

Booby traps are not new to war. They've been known, in one form or another, since the first belligerent disciple of Lebensraum hung up his sling and from a jungle trail launched himself on the unsuspecting form of an enemy. The Trojan horse, in a sense, was a booby trap even without the allure of Helen to add to the shock of the beseiged soldiers of Troy. A fish hook, hidden in the middle of a gob of worms, is a booby trap.

One tremendous booby trap was set off at Petersburg, Virginia, doing a mass killing job which is still pointed out as one of the great concentrations of death in the Civil War. Who remembers Vimy Ridge in the first World War where the Canadians did a mass killing job on the Germans that shook some heads in the Wilhelmstrasse? Toward the end of that conflict booby traps of the individual type began to appear in dugouts and trenches where the unwary soldier who picked up an abandoned rifle or helmet blew himself to bits. In this war the Germans have even mined bodies of slain men, so low do they reach in the human scale.

Booby traps have reached a new peak of devilish, fiendish ingenuity in the present conflict. The lethal things may be anywhere, in an innocent old shed, scattered about in fields where tanks or troops may pass, behind the picture in an abandoned house, in a shower bath, a water closet, stuck between the clipped leaves of a book, or even in a piano. It isn't unknown in this war for an unsuspecting, music-loving soldier to strike a particular note on a piano and have the instrument blow him to Kingdom Come.

Generally, booby traps are of two types—anti-personnel and anti-mechanized. The variations in their placement, their explosive and destructive possibilities and their capacity for doing damage to the enemy are tremendous. That is where the ingenuity of the soldier, or of the home defense man, comes in. Trained from childhood in games that, in a sense, simulate warfare, the American soldier is proving himself a master at camouflaging and placing the cute little devices that will blow the enemy to hell. Rommel and his boy friends are finding out that two can play at the messy game.

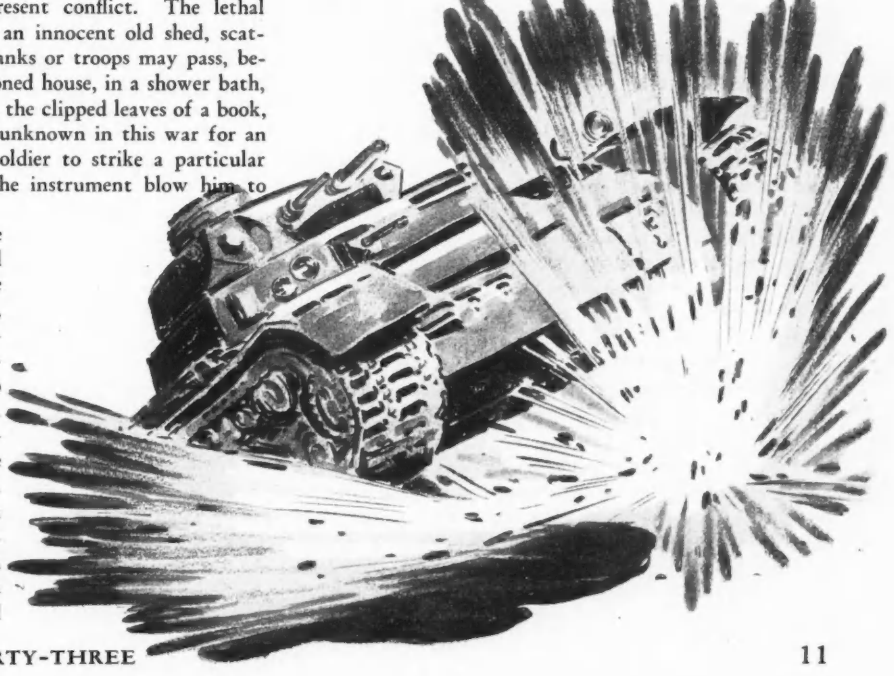
The possibilities for ingenuity are unlimited. The simplest improvisations and frequently the most effective are those which use in some way the ordinary purchasable type of igniter or safety fuse. They can be bought and safely hidden away under the fourth tree from the end in the third row of the orchard.

They can be connected up to a couple of sticks of dynamite, rigged for actuation by a wire, an innocent piece of string, a phone cord, a light switch, a door, a table, a window, almost anything. Trip wires can be stretched across a road or sidewalk. I've seen trip wires rigged across a doorway, obviously to be seen by anyone. But when you stepped gingerly across the wire you put your foot on another type of detonator concealed beneath a loose board in the floor. If you were the enemy you would vanish in a thunderous roar. I've seen them contrived from knife blades, suspended by a spring between contacts. If the blade contacts either side, the charge goes off. This homemade device can be rigged anywhere with a flashlight battery.

An ordinary .30 caliber bullet can be used as the core of a booby trap, backed up by a piece of pipe or a hollowed-out broomstick. With a few pieces of scrap lumber a crude frame can be fashioned to hold a plunger in constant tension under a spring so that when the tension is relieved the plunger will fall and explode the bullet. A shotgun shell can be used in the same way.

The whole thing becomes a kind of confidence game, with alertness, suspicion of everything, slow cautious work, the tools used to look for enemy-placed traps. The stakes are the lives of the searchers.

Locating and deactivating a mine, whether it be anti-personnel or anti-mechanized, is no job for the impetuous gent. The fellow-who-rushes-in-where-Angels-fear-to-tread isn't going to live long in an enemy-mined job. While he may be a whizbang at the ingenious business of fooling the enemy, he would better take it slow and easy to stay alive when fooling with enemy traps.



Latest thought on the lethal things runs like this: "Don't fool with 'em. Blow the darned things up and leave a position rather than kill a squad or a platoon. If the position is vital and must be held, have experts go over everything. Some casualties are bound to occur (the enemy is no dummy), but care and savvy will go a long way. Better sleep in the mud than be a dead duck."

Our Army has something new in anti-personnel mines, a jumping mine which is set on a spring and goes off several feet above ground, distributing fragments of death for many yards around. It may jump as high as 20 feet. If it went off in the ground only the men above it would be hurt, but up in the air it scatters death in all directions.

You don't have to be an expert to decide where to place booby traps. Notice where you step, where you place your hands, your own technique at opening doors or windows. The enemy does the same. Place the traps where he will explode them. Put them under telephones, under dishes, under chairs, in closets, under fountain pens, under flower bowls, anywhere the enemy may not suspect them. They'll work. But keep an accurate record of just where they are so if the enemy leaves the premises you'll know just how to deactivate them later.

An unsuspicious board in a dump leading to an abandoned automobile may be the trigger of a trap. An abandoned motorcycle may have a trap placed under its seat. The ingenuity of their placement is endless and the materials handy.

The whole business is tricky and dangerous, but there isn't any reason to believe the American soldier hasn't mastered it. He has, in every sense of the word. He doesn't yank open a desk drawer or pull open a door. He probes around a door jamb with wire. He doesn't pick up books or tread heavily on loose floor boards. He doesn't do much of anything in a structure just abandoned by the enemy.

"You don't hurry in a matter of life and death," said an engineer captain. "We teach our men to take their time both in setting mines and in deactivating them. Care will save lives."

The engineers carefully teach their men all the tricks of detonators, placement and camouflage, particularly in use of anti-personnel mines. The detonating devices used in anti-personnel mines are very small, capable of being hidden in the hand. Anti-mechanized mines, used against tanks, are heavier and carry their own detonators. The explosive itself may be anything—two or three sticks of dynamite—a charge of TNT, a hand grenade or a bunch of them, an anti-personnel fragmentation mine or almost anything at hand. They can be set anywhere.

Bad as it was, the last war was a picnic compared to this one. Take a wire cutting party for example. In the first World War the wire cutters did their job in comparative isolation and security. Star shells and flares might worry them and reveal their position, or a sleepless machine gunner, perhaps startled by an unusual noise, might turn loose a burst in their direction at random. But that was another war. It's different now. Most barbed wire entanglements today are mined, with the joint purpose of destroying enemy parties and warning defenders.

Mines are widely used at night when troops bivouac for a snatch of sleep. Trip wires run to hidden mines where an enemy patrol will be sure to touch them off. They make the finest kind of security, never asleep, always on the job. In the morning they can be removed. Wire entanglements are canalized so that if the enemy dodges the wire he will move into a mined area.

It isn't all grim and serious business in the training area, however. The engineers play tricks on each other, the same kind of tricks the enemy will be playing on them in a combat area where they'll be playing for keeps. One squad sets up booby trap installations in the barbed wire, concealing the detonators with the utmost ingenuity. They make maps of the mined area, while another squad does the same thing a few yards away, hidden by a stretch of woods. Then the two squads change positions and exchange maps.

Soon little firecracker explosions spread along the wire where a careless foot has sprung a trap or tripped across a wire. They wouldn't be firecrackers in a combat area. They would be heavily charged explosions which could kill many men. "What would they do in combat without charts?" asked a lieutenant.

Detonators are cleverly camouflaged below wisps of grass, replaced to cover the devices. They even spoon the dirt and carefully replace it so the enemy won't suspect anything wrong. You wouldn't have seen that camouflaged detonator, but beneath it in battle would be a charge heavy enough to destroy a squad.

A favorite trick, both of Americans and enemy troops, is to set the cute little things in series, one on top of another perhaps in sets of three. When, after a careful search, a man locates the top detonator and lifts it off, the mine immediately below goes off as pressure is released.

Anti-mechanized mines are something else. Here also the Army does all right and will teach Jerry a few tricks. The usual anti-tank mine can be placed anywhere in a dirt road carefully hidden below the surface where a heavy weight will set it off. Each spoonful of dirt is carefully sifted and replaced. The whole thing must look natural and above suspicion.

There is also the Bangalore torpedo used in the last war to cut wire. It does so in this war, too, blasting a 20-foot wide path for personnel and motorized stuff to go through barbed wire. The Bangalore torpedo consists of heavy lengths of iron pipe joined together by bolts or wire. Inside the pipe explosives are placed to be detonated from a distance by electricity.

(*Continued on page* 30)

History vs. *Histrionics*

A RECENT New York "Times" survey concerning the teaching of American history in our schools and colleges has aroused much wholesome (and the usual amount of silly) discussion.

Unfortunately most of the discussion has missed the most important fact disclosed by the "Times" survey. The matter of most importance was not the mere point of a disconcerting ignorance of American history among the present generation of Americans. The really important disclosure was the point that the whole American system of education and training has turned its back on American history and on American tradition.

It has started to follow instead, a wandering path marked out by men and women who have spent their lives in the cloistered safety of ivy-covered walls or who have found the hard actualities of earning a living in the world of commerce too difficult and so have retired embittered to evolve a theoretical Eutopia in which soft bodies and minds might dominate the economic and political world.

American history and American tradition make heroes of the hard-working, hard-bargaining, hard-fighting individuals who dared risk their lives and whatever fortunes they possessed in order to achieve new goals—military, political or economic. Such rough-and-tumble fighters, such hail-fellows-well-met, such homespun thinkers are a disturbing, even a painful element in the placid lives of the mentally and physically soft.

So, as the soft ones and the defeated ones move into the educational chairs shunned by the virile, rugged ones, we come gradually but with increasing rapidity to a type of education which avoids the hard facts of history, criticizes the "selfishness" or "short-sightedness" of the ruffians of the past and dwells tenderly on the future Eutopia.

Colonel Leonard C. Rountree told the U. S. Senate Education and Labor Committee on April 14 that young Americans entering the Army are "soft and flabby". One out of every four men in this age group were being rejected for service with the armed forces he said. Major General Lewis B. Hershey told the Committee that he was "much impressed and depressed" by the fact that fifty per cent of the registrants in the 20-28 age group were being rejected. Officers in training centers have constantly repeated, "These are good boys but so many of them lack the right *background*. They don't know what hard work means. They have been raised to believe society owes them a living. No one has ever told them that they owe society a contribution of hard work and discipline. They are soft mentally and physically. They don't know how to think for themselves. They don't know how to walk, how to *see* what they look at. The sight of blood or a little pain sickens them. They are mostly afraid of guns and of darkness filled with the natural sounds of the woods and fields. They are *mentally* and physically soft. If this war had waited for one more generation of Americans to be mentally and physically trained as these boys have been we would have been in one hell of a fix."

It is unfortunate that the "Times" did not expose what was happening in American schools before the product of that school system was plunged deep into the "blood, sweat and tears" of this war. But perhaps the national psychology is now better adjusted to the frame of mind required to make the needed corrections than would have been the case a year ago.

Let our publicists, politicians, educators and plain taxpayers face the fact that America's task of winning this war quickly has been immeasurably complicated, our loss of lives has been immeasurably increased, our internal bickerings and traitorous strife immeasurably pyramided by reason of a system of public education and propaganda which has substituted histrionics for history and rabble rousing for reason. It has been a system which has substituted "professional-amateurs" for mass athletics and a ticket in the grandstand for a personal struggle on the playing field. We have had too much "gimme" instead of the old American "get-out-of-my-way!"—C. B. L.

Le Sanglier

. . . A Yank in Africa gets a short leave for some unusual hunting An N.R.A. Life Member's Letter

By LT. JOHN Q. ANONYMOUS

TOP KICK, SERGEANT FRELIN, speaking fluent French, laid the groundwork and arranged all the details. As a result our safari, consisting of one two and a half ton truck, left camp at the ungodly hour of 4:45 a. m. North African War Time. We stopped long enough to collect the French officers who were to be our hunting companions and Max, our guide. Max augmented our safari to the extent of his own car, a German Opel, the Nazi version of our Chevrolet. We were, in all, nine.

The town of X was in complete blackout as we drove through but we shortly came out onto the highway where we could turn on our headlights. We needed them, too, because this highway doesn't compare at all favorably with our poorer farm roads back in the State of Washington. Max promptly lost his way and it wasn't until ten o'clock in the morning that we arrived at the forest. Fortunately the two patient game wardens were still awaiting our arrival and we went directly into action.

We were in beautiful country. It reminded me much of the Hemet Mountains in California. But it was, or seemed to be, far more extensive. From one ridge over which we passed we could see hundreds of square miles of hills, rounded and piled on each other against a most beautiful sunrise. But we hadn't come to admire the scenery. We kept on our way and after passing several signs saying "chasse interdit" we arrived at what must have been a hunting resort of some fashion.

We stoked up with a light snack of bread, sardines, sausage, ham and boar meat, wetting our whistles with good red wine. Gathering up a couple dozen Arab beaters and the dogs, we set out on foot. Hunters and wardens eased up a draw between two long ridges and took positions on one of the slopes. There was plenty sign about us. The sharp hoofmarks of the wild boars were everywhere and their rooting had torn up the ground all about. Before us lay the valley and the far ridge around which the beaters had gone when we came up the draw. We could hear them shortly, shouting and whooping it up as they came, barefoot, driving the *sanglier* before them.

Our armament was variety itself. Sergeant Frelin had a Tommy gun while I had my M1 Garand with the sights set at zero. Everyone else had shotguns of all gauges, shooting buckshot or solid balls. Some of the shotguns were hammer-guns and some newer and without the old "rabbit ears". One of the French officers had a Winchester Model 12 Pump gun in 16 gauge. The reason the shotguns were so predominant was that the usual range at which these boars are shot is not over twenty-five meters or thirty yards in our language. The ammunition was not nearly as powerful as our own field loads back home.

We could hear the beaters more clearly now, and shortly one after the other they came into view over the ridge. Someone fired a single shot somewhere to my left a couple

of hundred yards away. Suddenly there was a burst of shooting off to the right. The brush was so dense and the rocks so thick during all this that I could see very little. But shortly I could tell that the boar was coming directly toward me. I could hear the dogs and could see the brush sway in the wake of the chase. Suddenly the boar's hoofs clattered on the rocks not twenty-five feet from me. Suddenly, too, I recalled all the stories about the ferocity of these wild boars when pressed too closely. I frankly did a bit of worrying then, waiting for this pig, classed among the world's most dangerous game, to stick his snout through that last fringe of brush directly in front of me.

But he didn't and soon I could hear him crashing down the draw to my left. Directly he broke out into the open, back through the line of beaters on the far ridge about a hundred and fifty yards away, heading up hill. I stepped down past Max who had been standing right off the muzzle of my rifle and began shooting. By that time the boar was about two hundred yards away and everyone assumed that he was lost to us.

Those M1 sights are good. I could see the animal clearly against the mottled background, follow his every movement and spot my shots. The first was hasty, and the 180-grain bronze point I'd salvaged out of a .30-40 case before I left the States lit right behind the target. The next, an M1 172-grain boattail I smuggled over, landed just short of him. The third round was an armor piercer which I thought might expand like a hunting bullet. It lit right under the boar's belly and threw rocks all over the landscape. By this time I'd been able to do some hasty figuring and was able to place my fourth shot right behind the foreleg. It went through the heart and smashed a rock behind the animal. The rock dust was terrific. The boar reared and rolled over backwards. He staggered to his feet again and then sagged and rolled halfway down the hill until a sturdy bush halted his decline. To be positive of a kill I placed one more shot where it would do the most good.

From what followed, I gathered that this sort of a performance was entirely unorthodox and wholly unheard of. Everyone gathered about to admire the rifle and the man behind it. I could even understand what the Arabs were saying about "good shooting" as they dragged the boar back to the trail. I felt rather unnecessary and a bit pink about the gills.

We went on shortly and during the day covered at least twenty miles up and down and along those ridges. We bagged seven more boars. The only other shot I got, however, was to administer the coup de grace to one old hillmaster with my .45 automatic. He had been hit squarely in the ribs with a load of buckshot but managed to run about seventy-five yards before I could catch up to him. All the other animals were shot at not more than twenty-five yards.

About five o'clock in the afternoon one of the wardens invited me to go pigeon hunting. We went. At the base of a ridge, all undermined and hollowed out, we found a deep cavern, a hole in the ground about one hundred feet deep. The mouth of this cavern was at least fifty feet across, and it was jammed and packed with pigeons roosting for the night. The warden loaned me his 16-gauge, double hammer-gun and we switched to bird shot. When all was ready one of the beaters threw a rock into the cavern and, with a rush of wings, up came the pigeons. As the birds cleared the vertical rim of the cavern everyone cut loose. With successive rocks we drove out the pigeons in bunches until the cavern was completely clear of birds.

The result was not very encouraging. I got no more than four or five out of about twice as many shots and felt terribly about wasting the warden's precious ammunition. I don't know how or where he will get any more while the war is on but he didn't seem the least bit worried and seemed to enjoy my fun.

At length we loaded our truck and went back to the lodge. The Arabs cleaned out the kill and were given the smallest one of the lot. I had wondered at the manner in which these Arabs obeyed every order they were given without the slightest murmur or hesitation. We finally learned that they were prisoners of the wardens, which apparently accounted for their docility.

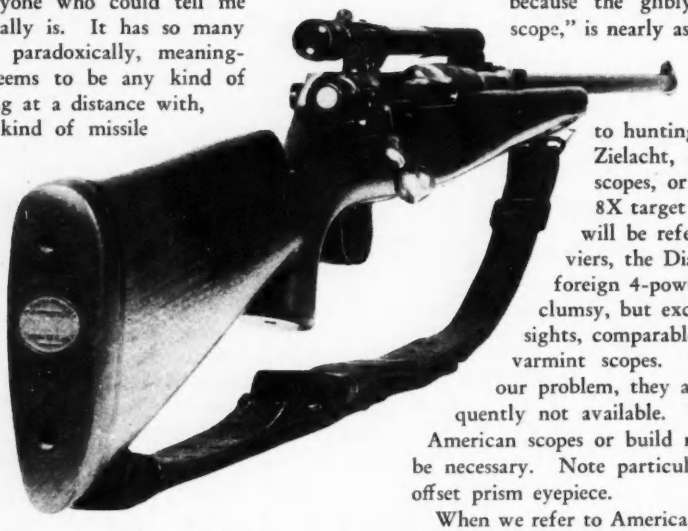
We had roast boar for dinner tonight. It was delicious. Better than domestic hog and not in the least wild or gamey. The French officers took four of the pigs and I was able to bring two back to the battery. Four hams were roasted tonight and tomorrow gives chops and smaller roasts.

Coming home that night it was really hard to realize that we were in Africa. Home? Huh! That ain't even funny! The sunset was beautiful in the hills. After dark we drove with lights to the edge of town and then went blackout. That ain't fun. The French liked my truck as well as my rifle, and thanked me for taking them. And I, in turn, thanked them for taking me along. The trip was a huge success and crammed with excitement.

Scope Sights for War

By F. C. NESS

THERE IS A LOT of "sniping" going on in this war on all fronts, but it is not what you think it is. This is not to be a story about military sniping because I have never found anyone who could tell me what sniping really is. It has so many meanings it is, paradoxically, meaningless. Sniping seems to be any kind of controlled hitting at a distance with, seemingly, any kind of missile not excluding the bull whip. In some minds it has become married, like "cheese and crackers," to long range, varmint type rifle work. You'll find officers of the same regiment or members of the same club who have quite opposite ideas on the subject. Many think of it as short range, hunting type shooting. One group is as right as the other. If we would simply forget the ambiguous word, much confusion would be avoided. It is too indefinite.



The Stith mount, offset to permit loading by clip

We were once asked by representatives of a procurement board to prescribe a scope sight for a given military purpose. They outlined their requirements which could be met only by varmint scopes in readily adjustable target mounts of the most accurate and reliable type. Some time later other representatives of a succeeding board let down the bars so completely that any ordinary hunting scope could meet their new, almost opposite requirements. I think both were wrong in failing to pool their ideas. The first group aimed too high and the second group didn't aim at all, at least not at anything specific. The one board had highly skilled specialist riflemen in mind. The other predicated its idea upon the law of averages, making it too haphazard.

This jumble of ideas about military scope sights is unfortunate because we need them. Almost all hunter-riflemen in or out of the services agree there is a place for the scope sight in war. They don't agree on the type of scope or the job it must perform. It takes military field experience to determine just what are the hunting conditions prevailing in any given fighting area of this global war. People who understand scope sight limitations can then, and then only, prescribe the proper outfit for that local condition. Finally, a composite picture of all fronts with their varied conditions may permit a satisfactory compromise prescription.

To help lay the foundation for intelligent discussion, we must clear up some prevailing misconceptions about scope sights and try to get a picture of their relative limitations in groups, arranged as to general types. This is necessary because the glibly-expressed term, "hunting scope," is nearly as indefinite in its application as that misleading word, sniping. When some few lucky riflemen refer to hunting scopes, they mean the big Zielacht, equal to our 10X target scopes, or the Zielsechs, equal to our 8X target scopes. Many more hunters will be referring to the imported Zielviers, the Dialytan, the Lovec and other foreign 4-powers, all of which are big and clumsy, but excellent general purpose scope sights, comparable in performance to our 6X varmint scopes. Though these might solve our problem, they are foreign made and consequently not available. We must turn to available American scopes or build new models. This may yet be necessary. Note particularly the Dake patent with offset prism eyepiece.

When we refer to American hunting scopes most of us think of deer hunting because of our numerical majority as deer hunters. As a matter of fact, our hunting scopes are a handicap rather than a help in dense deer cover. This is not true in open country or when shooting across depressions from a hillside or from one open spot to another. But in typical deer cover, dense woods and brush, it is possible to get only quick short range shots which somewhat resembles jungle shooting conditions. For such snap shooting the usual hunting scope and hunting peep sight are both inferior to open sights on the barrel.

For this particular condition there is a special scope sight which rivals the open sight in speed and surpasses it in accuracy for quick aim. It is superior to both the peep sight and the common hunting scope for this special job. I am referring to the unit-power shotgun scope of which the 1X Weaver is the best-known example. Like all other scope sights, it brings target and sight into a single focal plane and obviates the bi-focal job imposed by the peep sight system. It avoids the inherent need of continually shifting the focus of the sighting eye from game to bead and to barrel notch and back again, as must be done with open sights. It is superior to standard low power hunting scopes because it loses less natural light and has a much bigger field of view—upwards of 60 feet per 100 yards—as compared with the usual 25 to 40 feet. Furthermore, there is no inadvertent movement of the target image and reticule (post, dot or cross-hair) because there is no magnification of the field of view.

This lack of magnification is an essential contribution to the special purpose which might make it ideal for dark, dense jungle cover. However, this very lack makes it inferior for every other sighting purpose because its resolving power is nil and it cannot help the marksman to see

MI Garand fitted with Weaver scope and Stith mount, offset to clear the broad eight-shot clip used in the service gun

his target. The common hunting scopes (2¼X to 3X) are appreciably superior in this respect, but even these can contribute little aid in finding obscure targets or in resolving details one from another. This fact is clearly indicated in the following comparisons of resolving power.

I was much impressed by an experience of a friend in the Solomons. He was trying to locate a Jap from cover about fifty feet away with a good pair of 6 x 30 binoculars, but the enemy was too well camouflaged and the resolving power of the instrument proved inadequate. This inspired a review of my resolution tests of various types of optical instruments under similar conditions. This 6 x 30 was a Type-EE binocular, and I tested its resolving power at 75 feet under normal indoors illumination. The sighting target was much better defined than those encountered in practical use because the details of our sighting target had to be measurable. These were sharply contrasting parallel lines of jet black on a clean white background. Under the ideal test conditions of a steady rest and a contrasting target, the right tube distinctly separated ("resolved") adjacent lines as closely spaced as .0460 inch, and the left tube resolved those of only .0435 inch separation which is slightly better. At that range, which was a fourth of 100 yards, a minute of angle subtends roughly .262 inch.

Knowing that the 6 x 30 could resolve .18 minute of angle at 75 feet under ideal conditions was interesting, but what would other instruments do under the same conditions? Using the same system of testing, the poorest imported 4X scope sight equalled this performance and the better ones did appreciably better. On the other hand, the resolving power of the 2¼X Zielklein and of the 2½X Alaskan, both popular hunting scopes, proved to be inadequate and registered 0.0 in the same test by failing to separate even the largest lines on the chart which had a greater spacing of .0635 inch or about 1/16 inch.

Next, to indicate the effect of illumination, the same conditions were used with very dull daylight entering through frosted glass about 20 feet behind the target and reflected on the target from dull walls. The only combinations which under these conditions equalled or surpassed the .0450 inch resolution were: the 50mm. prismatic spotting scope with 19.5X and 26X eyepieces (the 36X barely reached this resolution and the 12X slightly surpassed it) and the 80mm. prismatic coaching scope with 12X eyepiece (the 21X slightly surpassed .0450 inch and both the 25X and 32X eyepieces greatly bettered this degree of resolving power). Under the normal indoor illumination first used, this big 80mm. instrument resolved .0300 inch in 12X and .0160 to .0035 inch with all other eyepieces. Under bright artificial illumination, it surpassed the limitations of the target whose smallest spacing was .0010 inch, no matter which eyepiece was used. This test indicated that brightness of image and magnification are both important. Under most conditions, magnification is the more important for revealing target details.

Because many readers are familiar with binoculars, it will be of interest to note the relative resolution findings with representative glasses under the normal indoor illumination of our first test at 75 feet. The 6 x 30 averaged .0450 inch as given above. The others averaged for both their right and left tubes as follows: 8 x 30, .0350 inch; 6 x 36, .0250 inch; 7 x 50, .0260 inch; 7 x 35, .0250 inch; 16 x 40, .0123 inch. A 15X draw-tube telescope registered .0223 inch. A 10X English fixed scope made it .0200 inch, and a 20X single draw led this field with .0060 inch.

The little ¾ inch varmint scopes which have small objectives of 15mm. diameter did not fare well in this test. An 8X scope of this type barely made out the biggest separation on the target which was .0635 inch. In 6X, the same model and make of scope sight made .0510 inch. The bigger 10X scopes converted from cheap low powers and standard high power models ranged from .0160 inch to .0035 inch. These varied as the diameters of their objective apertures which ranged from 32mm. to 37mm. The 15X target scope with 35mm. objective made .0060 inch, equalling the 20X single-draw spotter in the same resolution test.

Top: Snap-on three point Stith mount which uses Springfield rear sight base. Middle: The solid-top Johnson presents no mounting problem. Bottom: The frail-type target mounts for long target scopes should be replaced by sturdier Stith mounts

This test was too severe for ordinary 1X, 1½X, 2X, 2¼X, 2½X and 3X hunting scopes as stated above. However, the better and bigger 4-power foreign scopes registered from (the poorest) .0435 inch to (the best) .0385 inch. To correlate these with hunting scopes of inferior resolving power, the comparison test was continued under easier conditions, modified by going outdoors and moving up to 50 feet. Here the imported Dialytan 4X, which had registered a

resolving power of .0385 inch indoors at 75 feet, was now improved to .0135 inch. The 440 Weaver, 4X, resolved .0285 inch at 50 feet outdoors and the equally well-known Alaskan, 2½X, resolved .0500 inch under the same condition.

To go a step further in correlating all types of scope sights as to their resolving power, a special scope test target was designed and made for regular outdoor ranges of 50, 100 and 200 yards and all scopes were compared on it in overlapping groups. The same three hunting scopes were reclassified in this newly-adopted and standardized test. No finer distinctions than the nearest approximate fractions of minutes of angle were made. The two 4X scopes (Dialytan and 440) now resolved ¼ minute and the 2½X Alaskan, ½ minute, all at 100 yards outdoors in good even summer light. The best target scopes, which had given a relative resolving power of .0060 to .0035 inch indoors at 75 feet, now registered ⅛ minute to 1/16 minute of angle on our 100 yard target. The ¾ inch 6X improved from .0510 inch to 3/32 minute in this test.

The Lyman Alaskan with side-bracket mount in low position

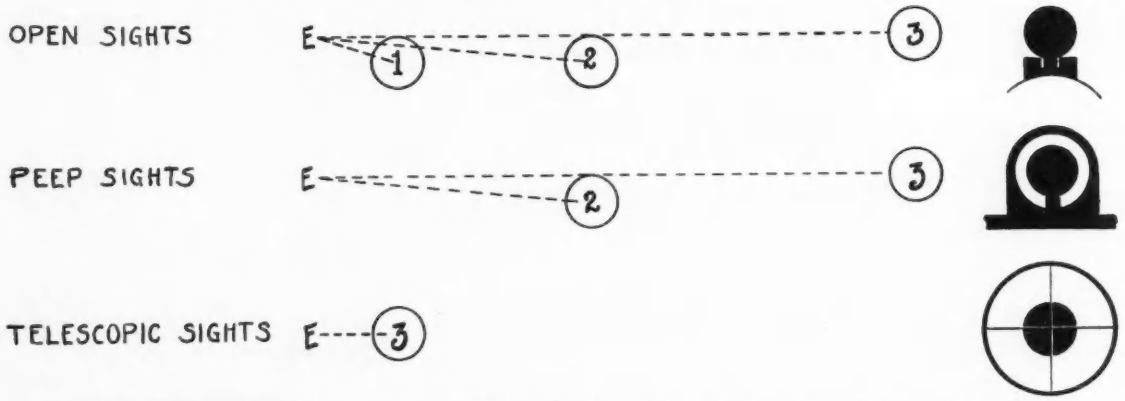
By overlapping the groups of scopes tested on separate days, the known records served as a check on the current light condition and on the vision or eye condition of the observer. This repeated checking of representative instruments and the generous distinctions in fraction minutes assured a pretty broad and reliable comparison for direct classification. The following tables of the results should help the reader to place any type of scope sight in its proper group as to its relative resolving power. Bear in mind that this comparison was made under ideal outdoor light on a clearly defined black and white target from rest positions by perfect 20/20 eyes. These results cannot be expected under less favorable field conditions of unsteady position, poor light and blending target colors. The field of view is given at 100 yards and will be twice as large at 200 yards, etc.

AMERICAN SCOPES

Power	Objective	Pupil	Field	Resolution
	(Big Prismatic Spotting Scopes)			
26X	55 mm.		7 ft.	1/32 minute
24X	64 "	2.6 mm.	9 "	1/32 "
20X	66 "	3.5 "	11 "	1/32 "
26X	50 "	1.8 "	6 "	1/32 "
19.5X	50 "	2.6 "	11 "	3/64 "
20X	55 "	3.0 "	10 3/4 "	3/64 "
	(Other Spotting Scopes)			
20X	44.5 mm.	1.90 mm.	7 1/2 ft.	3/64 minute
20X	36.5 "		7 1/3 "	3/64 "
40X	35 "		3 1/5 "	3/64 "
15X	30.7 "	1.4 "	7.4 "	1/16 "
20X	35 "	1.1 "	6 1/2 "	1/16 "
15X	35 "	1.1 "	9 1/3 "	3/16 "
	(Big Target Scopes)			
14X	39 mm.	2.5 mm.	8 ft.	1/16 minute
15X	35 "	2.0 "	8 "	1/16 "
10X	30 "	3.5 "	9 1/2 "	1/16 "
15X	37 "	2.5 "	5 3/4 "	1/16 "
8X	28.5 "	3.0 "	8 1/2 "	1/16 "
10X	32.5 "	3.5 "	8 "	1/16 "
	(Converted Cheap Scopes)			
10X	37 mm.	2.7 mm.	9 1/4 ft.	1/16 minute
10X	37 "	2.0 "	9 "	1/8 "
10X	37 "	2.0 "	9 "	3/32 "
	(Medium Target Scopes)			
8X	17 "	2.0 mm.	12 ft.	1/8 minute
8X	20 "	3.5 "	15 1/2 "	1/8 "
7X	22 "	4.0 "	13 3/4 "	1/8 "
*8X	32 "	4.2 "	11 "	3/32 "
	(Medium Varmint Scopes)			
6X	32 mm.	5.3 mm.	15 ft.	1/8 minute
6X	27 "	4.0 "	13 1/2 "	1/8 "
6X	15 "	2.5 "	11 1/2 "	3/32 "
6X	31 "	5.0 "	16 1/3 "	1/8 "
6X	31 "	5.0 "	15 "	1/8 "

* Special 8X scope tested by Marine Corps.

THE THREE SIGHTING SYSTEMS



With OPEN SIGHTS the sighting eye (E) must continually shift its focus from the target (3) to the front sight (2) and to the rear sight (1) and back again continually causing a blurred or imperfect vision at two of the distances. The PEEP SIGHT system eliminates the rear sight but requires a shifting focus between front sight and target. The SCOPE SIGHT requires no such shifting, as the eye has to focus only on the image of the target (within the scope) and in the same focal plane (or distance) as the sight (reticule). The system saves eye strain and appreciable time in aiming.

			(Small Game Scopes)					
4X	16	mm.	2.0	mm.	24	ft.	1/4	minute
4X	17	"	4.0	"	21 1/2	"	1/4	"
3 3/4X	16	"	6.0	"	22	"	1/4	"
4X	19	"	5.0	"	23	"	1/4	"
			(Low Power Hunting Scopes)					
3X	19	mm.	7.0	mm.	27 1/2	ft.	1/4	minute
3X	19	"	8.0	"	29	"	3/8	"
3X	19	"	6.5	"	29 1/2	"	3/8	"
3X	15.5	"	6.0	"	39 1/2	"	3/8	"
2 1/2X	18	"	10.0	"	39	"	3/8	"
2 1/2X	19	"	7.0	"	39	"	1/2	"
2 1/2X	19	"	9.0	"	34	"	1/2	"
2 3/4X	16	"	9.0	"	33	"	1/2	"
2 3/4X	16	"	9.0	"	32 1/2	"	1/2	"
2 1/2X	15	"	7.0	"	39 1/2	"	3/4	"
			(Shotgun Scope)					
1X	16 mm.		10.0 mm.		66 ft.		2.0 minutes	

The measurements of all characteristics are our own with one exception as indicated. The table is a comprehensive one which includes all types of scopes and every American model measured, tested and checked including practically all makes—Lyman, Fecker, Unertl, Belding & Mull, Weaver, Wollensak, Murrey, Pechar, Noske, Carolyn, Malcolm and Litschert as well as conversion jobs (Litschert-Lyman, Range-King-Marlin) and spotting scopes by Bausch & Lomb, Mossberg, Argus and Wollensak.

It will be noted that, with an occasional exception, there is no great difference in the characteristics of individual members in each group. Those having exit pupils of 6mm. or larger are best adapted for night work, and if they have fields larger than 25 feet they are also the best for quick-aim purposes in snap shooting on moving targets. Note the group of low power hunting scopes in the table. Such scopes lack resolving power, as the table indicates, and they cannot pick out fine details at any range and are not of much benefit beyond 150 yards for small targets.

The poorest in this respect is the 1X shotgun scope, although it is the fastest scope of all for short range work in dense cover. It is capable of distinguishing sharply contrasted 3 inch cubes spaced 3 inches, but no closer, under ideal field conditions of light and background at 100 yards. Under normal field conditions, it could pick out a lone hand or a single face unless these were obscured by cover or coloring. At best it is of doubtful benefit beyond 150 feet, except for targets clearly visible to the naked eye.

Above: The Pachmayr Universal hinged-mount may be swung clear for clip loading without loss in zero. Below: The Noske scope shown in the same mount, but returned to its firing position

Top: 4-X Dialytan imported scope in Griffin & Howe, double-lever, quick-detachable mount, must be removed for clip loading. Bottom: Weaver rigid bridge mount for single loading

In the next group of small game scopes above the low power hunting scopes, we find twice the resolving power. They will serve the same purpose at 200 yards that is fulfilled at 100 yards by the low power hunting scopes. They will fail on picking details much beyond 200 yards where they might distinguish a man's head under fair conditions of light and background. Unless the exit pupil is at least 4mm., such scopes are not adapted for poor light. The resolving power shown was obtained in fine daylight on sharply contrasted targets. With fields broader than twenty feet, these scopes are practical on moving targets. In this connection it is of interest to note that I have not seen any foreign scope, regardless of make, model or power with an exit pupil as *small* as 5mm. or with a field as small as 15 feet per hundred yards.

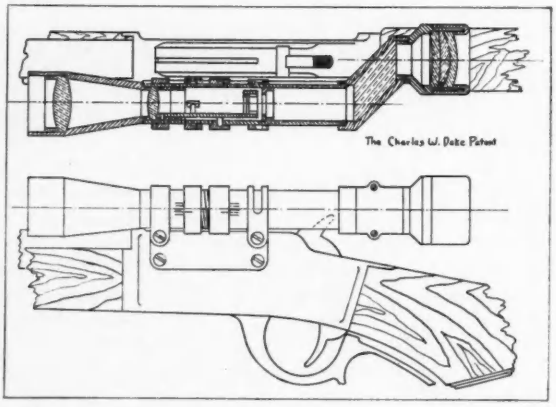
In the next group we have the medium power varmint scopes with resolving power twice as good as that of the preceding group, but with exit pupils down to 5mm. and fields down to 15 feet or smaller. These represent about the minimum suitable for any practical speed in locating a target or in getting aim on a moving target. They are fairly good for showing details at 300 yards under fair conditions and will serve in poor light on large contrasting targets. They are about in the same class as the medium power target scopes of the next group. These two groups of scope sights will resolve objects as well at 400 yards as the low power hunting scopes can resolve them at 100 yards under practically any condition. These and our small game scopes, in another group, are our nearest compromise choices for meeting the purposes and the optical performances of the big general-purpose foreign 4-power scopes.

For the old idea of World War I, which was 600 yard

sniping, we will have to go to the next two remaining groups of scope sights which likewise have twice the resolving power. It must be observed, however, that they are good only for this purpose (of questionable importance) and for none other. Their fields are too small for any but the most deliberate long range shooting, and their exit pupils are too small for any light condition other than bright daylight.

In fact, the fields are about half as wide as is required for mid-ranges and a third of that needed for short range snap shooting. The exit pupils are so small they are hard to find quickly for alignment in all positions, being about the size of the eye pupil when it is 50 per cent contracted by bright light. The exit pupils of these scopes are smaller than the eye pupil when it is dilated 100 per cent to 7mm. diameter, as in semi-darkness. Furthermore, these high power scopes must be carefully focused at 200 yards and so will blur, badly out of focus, at short ranges if a quick, unexpected short range target appears. This is true in lesser degree of some 8-powers. The 6-power is relatively free of this curse, and all scopes of lower powers are practically of a universal focus; that is, they are practically in focus at any distance at all times without change, once adjusted for the individual user's eye.

That completes the review of all types of our American scopes and their purposes with detailed descriptions of



The Dake scope clears the clip, yet gives central aim for eye

their most pertinent features and characteristics. For brand names and for their physical dimensions and other missing optical data, see the N.R.A. manual, "American Sighting Scopes." * Now, we must wait for the military experts to tell us what is the most prevalent or most important fighting and sighting condition to be met. It is obvious that the best scope for use on Japs skulking in jungle tree roots is not the best instrument against Nazis in desert fox holes or on Fascists along the beaches or in the mountains. Some one or two groups, as classified, may be profitably employed as a compromise. Otherwise, a new general-purpose scope sight must be built.

No matter which type of scope is finally chosen for whatever military purpose, the reticule or aiming device must be considered with equal care. The sight most easily seen in poor light against dark backgrounds is the flat-top aiming post, and the bigger the quicker, up to 8 minutes coverage or 8 inches at 100 yards. However, good as it is for short range snap shooting in dark dense cover, the big post obscures too much of the field and is poorly adapted for long range accuracy because it covers the target and does not permit holding over unless it is suspended from the top of the field in the image. This is true in lesser degree of smaller posts down to 2 minutes coverage, or 2 inches per hundred yards.

The cross-hair is the most accurate aiming device, but if it is too large to be quickly and easily seen under adverse conditions it covers or obscures more field than the small aiming post. When it is made fine enough for the best long range accuracy, it is often lost against unfavorable conditions of background and light. The answer is a center dot like those perfect spots installed by T. K. Lee which cover an inch per hundred yards in 8X, 6X and 4X scopes or twice that in the low power scopes. In a medium power (4X, 6X or 8X), it is practical to have two or more inch size dots on the vertical wire or on a second cross-hair below the center dot. These auxiliary dots serve as range finders when the size and separation of the dots or of the second cross-wire are known and compared with some familiar object of known dimensions in the field. A good useful separation is 3 or 4 minutes of angle between dots or horizontal wires.

Adjustments for zeroing the sight and the piece are important but these are available in all scope sights. Most of them have to be locked and left zeroed or the sighting-in process must be repeated by trial-and-error shooting. Others can be removed and replaced without disturbing the zero. None, outside the regular target mounts for varmint, small game and target scopes can be adjusted or changed in the field from shot to shot or range to range. So, forget all thought of adjusting the practical scope sight once sighted-in and locked until more reliable hunting type mount adjustments or more dependable internal scope adjustments are available than those made today.

The gadget which transforms the optical transit into a sight is the mount which fixes it to the rifle. We have two types of rifles to consider, the semi-automatic M-1 (Garand) and the bolt actions M-1903 (Springfield) and M-1917 (Enfield). Any kind of strong bridge-type mount or side-bracket mount can be used on the bolt actions and left there solidly locked, if single loading is practiced. Examples are the Belding & Mull, the Sorenson Springboard, the Stith, the Senior Redfield and Tilden bridge mounts, all adjustable for zero. The Weaver Type-B mount and the Albree Twinmounts, both for ¾ inch tubes only, can also be used on ¾ inch Weaver scopes which have internal adjustments for zero. The Model 1917 rifle permits a low position of the scope, whereas the Model 1903 requires a bolt handle alteration or a higher position of the scope to clear its handle. For this Springfield one of the best side-bracket mounts is the Griffin & Howe Zero Rig. Single loading of these bolt actions is practical.

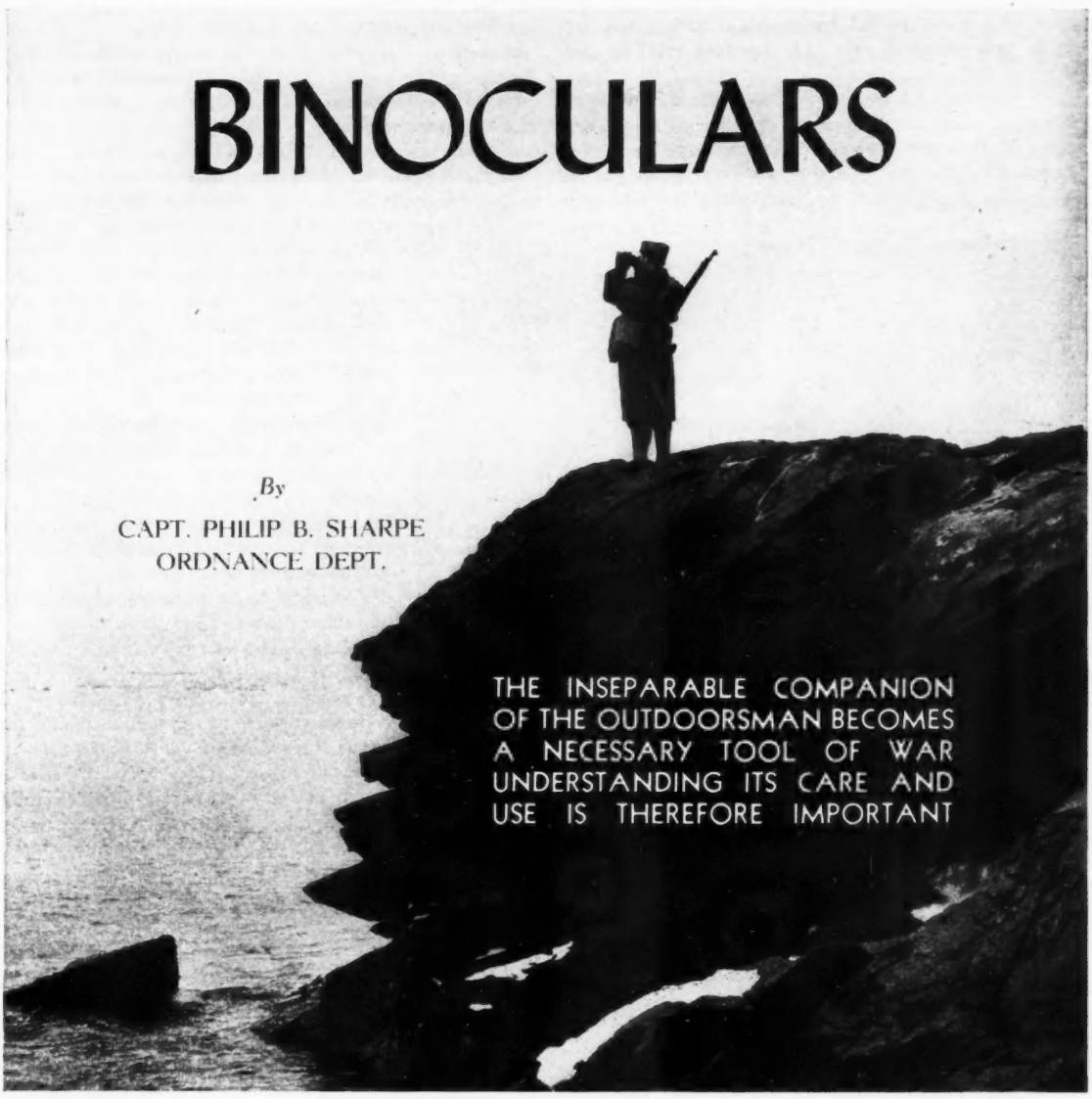
When it is desired to clip load the bolt actions, a quickly detachable mount or a hinged mount must be used. An example of the Q. D. mount is the Turner. There are good Q.D. side-bracket mounts also, such as the Niedner double lever and the Hart Multiple. An example of a good hinged mount is the Pachmayr Universal. It may be swung out of the way to permit clip loading and returned to original zero.

The M-1 Garand rifle is practically impossible to single load under a scope mount. The 8-shot clip simply must

(*Continued on page 37*)

* N.R.A. Book Department, price 25 cents.

BINOCULARS


THE INSEPARABLE COMPANION
OF THE OUTDOORSMAN BECOMES
A NECESSARY TOOL OF WAR
UNDERSTANDING ITS CARE AND
USE IS THEREFORE IMPORTANT

By
CAPT. PHILIP B. SHARPE
ORDNANCE DEPT.

"WHAT'S THAT PLANE?" This is a common question these days. It is being propounded by the Army, the Navy and Marine Corps, by the Coast Guard and by civilian air spotters as well. It is in the minds of all of us for very good and sufficient reasons.

The binocular is of the greatest aid in answering this question. It is one of the more important items of offensive and defensive equipment in the hands of our people in these days of high speed war. The location and identification of enemy personnel and equipment would be extremely difficult and hazardous without it.

But the binocular is not only a tool of war. In peacetime it is the inseparable companion of the sportsman and outdoorsman. Whether he be rifleman, yachtsman, bird lover or naturalist or even the race track habitue, the binocular is the common tool. It brings to all a keener, more complete enjoyment of all the wholesome joys of the out-of-doors. Unfortunately, it is also one of the least understood of all outdoor paraphernalia.

The binocular is an optical instrument of the precision type. As such it merits careful study in order to extract the fullest measure of enjoyment from its use. By its very nature it is a delicate instrument and should be handled with care and understanding and must always be kept in perfect operating condition. It is designed to be an aid to the eye and can be such only when in perfect adjustment and in suitable operating order. When that adjustment is disturbed by rough handling or abuse it can easily become, instead of an aid, a definite hazard to the eye.

During the past twenty years or more the American market has been flooded with imported binoculars, mostly cheap and useless junk. Their retail selling price is often out of all proportion to the manufacturing cost, yet they often sell at less than one-third the cost of quality, American-made instruments.

One of the chief means of spotting these inferior glasses is the lack of any "maker's" identification. Such names as "Superlux," "Daylux," "Eagle," "Long Range," etc., mean little other than they are probably a low quality imported product. One large importer has a special brand name which, if you study it closely, you will find

is his own name spelled backwards. Such glasses are not *all* bad. They do vary and, therefore, must be carefully selected for service.

The simplest of these instruments is the non-prismatic field glass. This usually consists of a pair of simple telescopes of low power magnification mounted in a rigid frame. The focus is adjusted by a central wheel, but the two halves usually cannot be "bent apart," on a hinge to change the interpupillary distance or distance between the eyepiece lenses. They are cheap to manufacture and frequently unsatisfactory for service.

Official U. S. Navy Photograph

The Navy binocular scans sea and sky for hostile craft

The prism binocular is a far more complicated instrument, and for this reason it costs more. Glass prisms within this instrument reverse the rays of light upon themselves so that a small and compact body can obtain the optical qualities of a large and bulky non-prismatic field glass. Instead of simple single lenses, it usually contains compound lenses, which in a quality instrument are corrected for color, that fringe of varying colors seen at the edges of the field of view, and other optical defects.

The binocular also has adjustments to take care of interpupillary distance, the distance between the eyes which varies greatly in people. It also has some means of focusing each half of the unit separately to take care of the variation found in individual eyes.

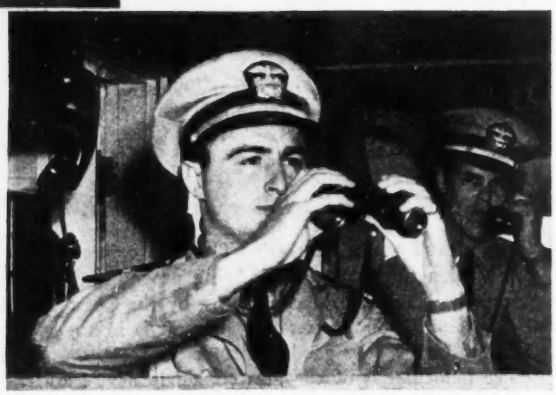
There are two types of focusing devices found in binoculars, the central wheel type and individual eye focus. In the central wheel type, a thumb-and-finger wheel between the two halves controls the focus. In addition one of the eyepiece lenses, usually the right, may be adjusted independently.

In the individual eye focus types, there is no center wheel; adjustments for focus are made at each eye. This is the sturdier type and stands rougher service better. With the central focus type, the eye or ocular lens assemblies are mounted on a delicate bridge. If the instrument is dropped or roughly handled, this bridge may be easily bent and the alignment between the halves destroyed. Adjustment is a *laboratory* job, and not one for the home workshop.

Simple basic optics should be understood by everyone using these glasses. Many advertisements have been published which are misleading. How far can you see with a pair of binoculars? *Only as far as you can see with the naked eye.* But with a good optical instrument you can see better—the object *appears* closer. You can study detail. The man who uses a binocular to "see far" doesn't get full value from the instrument. Detail is the important point, *detail* and *clarity*.

What power? Generally speaking, ten power is maximum. Eight power or magnification is sufficient and better if the glass is to be held in the hands without a rest. The slightest body movement is magnified by the power of the glass, and few persons can hold any instrument of this sort steadily. The image seen through the binocular "dances" and you cannot study detail unless the glass is held rigidly steady.

What about lens diameter? The objective lens is of major importance here. This controls the amount of light reaching the eye in relation to the magnification of the glass. This light value is measured with the designation of "exit pupil." To determine the exit pupil of a given glass, use simple arithmetic. Divide the diameter of the objective lens, usually expressed in millimeters, by the power or magnification. Thus in a six-power glass with a 30mm. objective lens, called a "6 X 30," the exit pupil will be 5mm. To compare two lenses of different diameters, manufacturers of quality binoculars use the term "relative brightness" which is the square of the "exit pupil." Thus, the 6X, 30mm. and 7X, 35mm. binoculars have a "relative brightness" of 25. The 8X, 30mm. binocular has a "relative brightness" of only 14.3. Therefore, the 6X, 30mm. and the 7X, 35 mm. binoculars are almost twice as brilliant as the 8X, 30mm.



Strange as it may seem, few people really know how to focus a binocular. Each eye must be focused individually, regardless of the type of focusing device used

on the instrument. Most folks close first one eye and then the other. Don't do it!

If your glass is of the central focusing wheel type, hold it to the eyes on a distant object, resting the elbows supporting the glass. Hold it with the holding hand cupped over the object lens of the half with the individual eye correction adjustment. Then, with both eyes open, focus it carefully with the central wheel. There should be no eyestrain. Remove it from the eyes a moment to be positive, then check it once more.

Now shift the glass to the other hand. Do not touch the central focusing adjustment, but cover the *other* objective lens. If the focus is not perfect with the other eye, correct by turning the adjustable ocular lens assembly in the necessary direction. Note the scale marking and you can always return it to the correct point if another person uses your glass. From that point, all focusing should be done with the central wheel.

Earlier, we stated that the diameter of the *exit pupil* controls the amount of light passing through the binocular. This is true only in an optically perfect unit. Dirt on the lenses, inside and out, and dirt on the prisms, may greatly cut down this light without altering the diameter of the exit pupil. Dirt can also destroy definition.

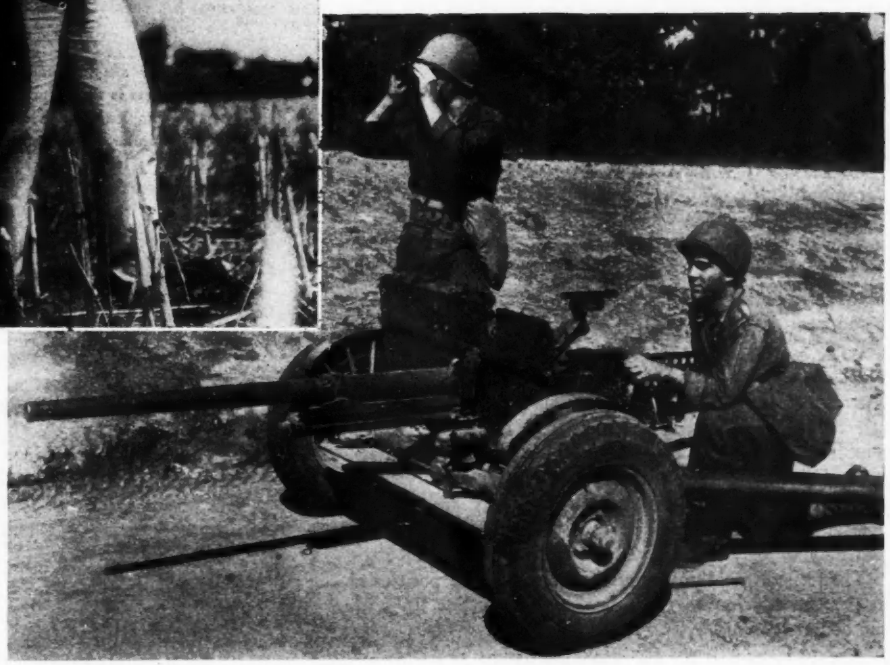
It is easy to determine whether your glass is dirty. First inspect the ocular lens. Any film or finger marks can be seen if held away from the eyes at a slight angle to the light. Clean by using optical tissue or well-washed linen or silk only. *Never* use cotton or wool. Breathe on the glass and wipe gently. Repeat several times. Never use pressure to do it quickly. Then do likewise with the objective lens. Dirt or film inside the glass and on the prisms is easily spotted. Reverse the glass, point it at a soft light and look into the objective lens. Dirt and film will show up clearly. Dirt inside the glass is due to two probable causes. Either the instrument has been taken apart and reassembled by someone who shouldn't have done so, or the essential "breathing" of a focusing devise has permitted it to enter over a period of years.

Depending upon the atmosphere in which it is used, dirt or "scum" may, in time, collect upon the optical surfaces. It can be removed, but the job must be done in a well-equipped laboratory capable of disassembling the optical parts, repolishing them, and assembling and aligning them with special instruments.

Never take a binocular apart. Regardless of the quality of the instrument, no individual, not even the expert with tools, can reassemble it and be sure it is optically perfect. It should be sent to a laboratory for this job. And before you send it in, find out if that laboratory employs a collimator for alignment. No one can do a proper job of aligning the optical parts "by eye," regardless of his claims.

One large American firm which for two decades has been importing good quality foreign glasses, told me that no glass is sold until carefully inspected and realigned with a collimator. "We'd hate to tell you the percentage of glasses that have to be realigned," the chief engineer told me, "but most of these require some attention. We have been doing it on all glasses, whether they retail for twenty-five or seventy-five dollars."

Just because a glass was originally in perfect alignment does not mean that it remains so. Shock is the greatest



The binocular of the soldier as well as that of the civilian hunter seeks out his target, identifies it, and makes it possible for him to concentrate his most effective fire on it

enemy of alignment. In the Navy, the optical requirements are severe. A glass might be dropped; the concussion of heavy guns can ruin it. Therefore, tests must be severe. This writer has watched Navy glasses being built and tested, and the abuse given them by inspectors is amazing. Such binoculars cost between $80 and $150 and they must be made to stand shock without in any way disturbing the alignment of the optical system.

In selecting a glass, perform these simple tests. First, you want clarity. Always check on *print* rather than trees, buildings or people. If possible, use a distant sign and look for detail. See how clearly the print shows up. If you check it on a street, seek a distant car and check the license plate. Read the number. Note if there are mud spots, rust or scratches on the plate. To test, always hold the glasses steady, even if some kind of artificial rest is necessary. And be certain that you have focused properly before making the test.

Checking for alignment is more difficult, but a crude test may be performed. If a glass is out of alignment, eyestrain is certain to occur, and after continuous use for five minutes or more, the user will probably develop a headache. A young person of twenty with normal eyesight can use a binocular out of alignment better than a person of forty with normal vision. His personal optical system is more flexible, *but* the danger of injury to his vision is more acute. The older user will get a headache more quickly and quit.

"Out of alignment" really means that the two images, one for each eye, do not "fuse" or overlap perfectly to give one distinct image. Thus one eye strains against the other to correct this trouble. Try looking at the tip of your nose and you'll feel real eyestrain.

A simple test will show you if a glass is badly out of alignment. First, be sure you have focused it properly, then adjust the interpupilary distance. This distance is just to match the distance between the eyes and is accomplished by "bending" the two halves at the hinge joint so that the object viewed blends into one round circle and not two partially overlapping ones. If possible, rest the glasses so that they are not held in the hands, viewing the cross bars of a window against a clear background such as the sky. If two images of those cross bars can be seen, the glasses are very badly out of collimation. Do not use that glass until this has been corrected!

The gun bug can dismantle a firearm, doctor the parts and reassemble it, often as an improvement. But this is not true of a binocular. Any glass that has been tampered with is most certainly to be optically defective.

Essentially you have, in each half, three separate units. In one good American make, the *ocular assembly* is composed of three separate lens units, each a doublet, composed of two different kinds of optical glass, ground with different surface curvatures and cemented together in pairs. These must be properly spaced, and optical centers must be in balance. Take them apart and you may or may not get them together properly.

Then there are two *prisms*. Each must be positioned in perfect relation to the other, and must line up with the ocular lenses.

Finally we have the *objective lens*, also a doublet composed of two separately ground lenses cemented together. In some glasses these are mounted on two eccentric rings so that a slight twist in opposite directions shifts the optical center to align it with the prism-ocular assembly. In other types, the two prisms have to be shifted to get this correction.

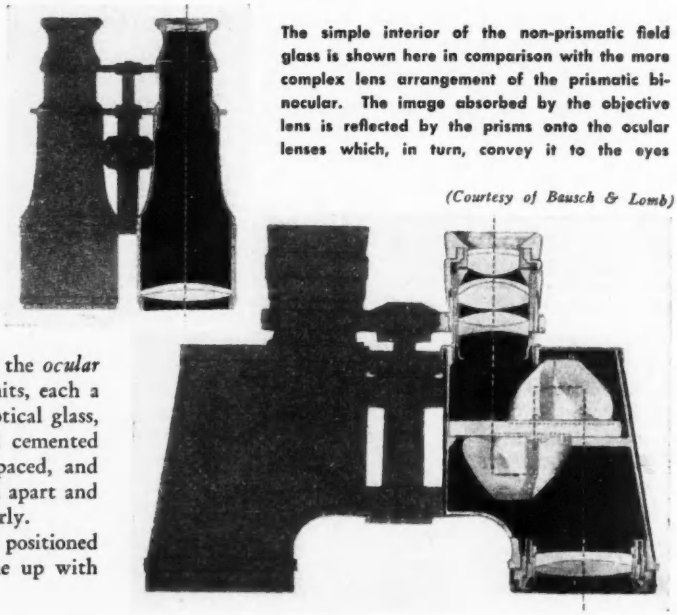
But the optics are not the only weak point in binoculars. In some the mechanical design is poor. Sometimes the ocular lens tubes fit loosely and are rarely in alignment. In still others that moveable bridge supporting the two oculars for focusing is so light that it is easily bent, throwing everything out of alignment. In some binoculars the metal parts inside are too soft and light for the job and thus a securely anchored prism can be shifted by rough treatment.

If you desire service on a binocular, it will pay you to enter into correspondence with reliable repair shops to see if they have the skilled help and optical instruments necessary to do the job properly.

Finally, if an old glass has been dropped or mishandled it should be thoroughly overhauled by the maker, if possible. Lenses and prisms will naturally film slightly, the cement used in the lenses will discolor or darken, and the assembly will otherwise lose some of its original quality. The maker, or a good laboratory, removes the lenses, separates them by dissolving the cement, repolishes the lenses, and recements them. The whole works is then reassembled and aligned. On a quality glass it then is almost as good as new. On a cheap glass it is usually much better than when new.

This work costs money. First, ask for an estimate. A reliable laboratory will not take your money for a useless job, and after they have examined your binocular they will tell you if the job will be worth the expense involved.

The wise man who injures his binocular has it repaired. It will pay dividends in better service and enjoyment, and danger to his eyesight is eliminated.



The simple interior of the non-prismatic field glass is shown here in comparison with the more complex lens arrangement of the prismatic binocular. The image absorbed by the objective lens is reflected by the prisms onto the ocular lenses which, in turn, convey it to the eyes

(Courtesy of Bausch & Lomb)

Good Pistols from Cheap Rifles

The author's latest creation on the Remington Rolling Block action

By FRANK DE HAAS

AT ABOUT THE AGE OF FIFTEEN I found myself sadly in need of a pistol for frog shooting. My fifteen-cents-a-week allowance, however, wouldn't even permit me so much as a glance at a secondhand gun. So, I made one.

This was a rather crude piece of work I must admit, but it worked—after a fashion. It was quite simple. A short piece of an old .22 barrel was fitted to a bent section of a tree limb and fastened more or less securely by wire. A breech block of lead with a nail as the firing pin was hinged to the tree limb. A rubber band served as the main spring and activated the hammer. Thus I had my first pistol.

Fortunately, I had sense enough to proof fire the thing with a .22 long rifle Hi-speed cartridge and a piece of long string. It seemed to hold together and thereafter I used in it nothing but shorts. Eventually the breech gave way and I had to give it up. This sort of an outfit is not recommended.

But I couldn't give up the idea. Since that first monstrosity I've made many others on the same general principle, but each has been an improvement on the previous one. I have no doubt that there will be others in the future, better ones I hope, even though they will in all probability and of necessity be very simple.

The first serious attempts at making pistols out of rifles were tried out with the little Winchester Models 04, 06 and 58. These made very good and accurate little pistols, but they were quite awkward as are all such things made from bolt action rifles. I shifted, then, to the Stevens Visible Loader. This was better. It was short and handy and it was equipped with an automatic ejector. This was accomplished by substituting the locking devise for a little coiled spring. My first frogs were shot with this baby and it did all right.

I've been laughed at for even owning two little Hamilton .22 bolt action rifles. But I did and I made pistols out of them, too. I made one light and one heavy pistol out of them and they are being used today by friends of mine who are still my friends.

The smaller one of the two and also the better one has a 7 inch barrel and weighs 28 ounces. It will outshoot the whole line of the cheaper .22 pistols and revolvers on the market today. The large one has a 12 inch barrel,

The Winchester Bolt Action pistol
The Stevens Crackshot free pistol
Stevens 14½ Little Scout—not tapered
Stevens 14½ Little Scout—tapered

weighs 36 ounces and shoots those little .22 BB caps beautifully. They each have a few ounces of lead in the grips and adjustable sights.

These little actions were rather poorly made but by fitting heavy extractors, new trigger and sear arrangements and by locking the barrel to the receiver by means of steel pins they were made quite reliable. While I never tried to shoot .22 long rifle Hi-speed cartridges in them, their present owners do so regularly and both pistols seem to be doing well, thank you.

Little effort is required to make a pistol out of the Stevens 14½ Little Scout. Two of mine are illustrated herewith. The small one weighs 22 ounces with a 6 inch barrel which I filed to a taper. It has fixed partridge sights. The large one weighs 28 ounces and has an 8½ inch barrel.

Walter F. Roper's article on free pistols in the RIFLEMAN sometime ago intrigued me to such an extent that I simply had to make one. For this purpose I chose the Stevens Crackshot which shows up in the accompanying illustration. This gun weighs 40 ounces and has a 10 inch barrel. The sighting radius is 13½ inches.

The extension rear sight is sweated and screwed to the frame and is adjustable for windage and elevation. The front sight is a Mossberg. The grip is fastened to the frame by means of a screw as was the original stock. The small forearm extends back on each side of the frame. The hook of the finger lever was cut off and then welded on again as shown. This keeps it out of the way, yet right handy to grasp when working the action. The action is easily tuned up. An important thing here, though, is a tight-fitting lever bushing which keeps the action closed tight. The action is amply strong for the long rifle cartridge and shooting it from a rest left no doubt regarding its accuracy. I honed the trigger pull to ½ pound and it has stayed at that weight for over 500 rounds.

I have just finished a job which to my mind is the best of the lot. It is built on one of the simplest of actions, the Remington rolling block action. When it's done you've got something. The finished job weighs 36 ounces with a 7½ inch barrel. This action is simple, strong, positive and neat. It was made in .22, .25 and .32 RF calibers. Mine was a .32 but I made it into a .22 as I didn't have a .32 barrel. I bought this action from a kid for a dime but it was so rusted that I had to soak it in kerosene for nearly six months.

First, I cut off the tang flush with the frame. Then from a piece of ¼ inch square mild steel rod I bent a frame to form a foundation for the grip. This was welded to the frame. The main spring I took from a Model 90 Winchester, ground off the claw and fastened it in place by a small screw tapped into the frame. The walnut grips are held in place on the frame by small pins set inside and they are held together by a long screw set in brass plates.

The barrel came from a Stevens Crackshot. The bore is off center and this helped materially as it meant that the firing pin did not have to be changed. The frame was tapped with a standard ⅜ inch pipe thread and the barrel threaded for the same. I chambered, counterbored and cut in the extractor slot in the barrel before fitting it. The old extractor was remodeled to fit and ejects the fired cases nicely.

A Remington front ramp sight is held in place by two small screws. An old rifle sight fit into a dovetail slot cut into the top of the frame by a file serves as a rear sight. This has a good clean-cut square notch. When a tiny forearm was fitted and the metal parts all polished and then blued, the job was done. The darn thing shoots as well as it looks.

The "Bazooka"

IT HAS LONG BEEN AXIOMATIC among military men that a new weapon may win battles but it never wins wars.

Already the new hand weapon of the American Army, nicknamed the "bazooka" by the soldiers, has won a battle and it will win more.

"For months shrouded in secrecy, strictly a hush-hush weapon, although demonstrated to observers five months ago the bazooka can destroy any enemy tank on the battlefield today," says Maj. Gen. Levin H. Campbell, Jr., Chief of Ordnance. Troops have had the weapon for many months, have trained with it and know its capabilities and intricacies. It is a supplementary weapon, designed for use in combination with other types rather than the main infantry weapon against tanks, pillboxes and fortified positions.

Details still are a closely guarded military secret.

But the blast effect of the projectile and its ability to penetrate armor, concrete, brick and wood is among the main features of the bazooka. The projectile penetrates several inches of proof armor, detonating on the other side. It will blast apart concrete structures such as pillboxes and will penetrate and blast brick walls.

The bazooka is handled by two men, one to carry the projector and loose the projectile, the other to carry ammunition.

All combat troops will be trained in the use of the bazooka, which has been issued to many units in training, and has been in general use in North Africa. Even personnel not actually in the front lines will learn to use the weapon, presumably on the theory that in case of a break through by enemy armored units they will be able to repel attack.

Attacked by the bazooka in combination with the rifle grenade, the Molotov cocktail and other weapons for individual use against tanks, the armored steel monsters have been far from invulnerable. Life in an enemy tank will be no picnic against men armed with the bazooka.

Primarily intended for close range work, the rate of fire and accuracy of the projectile have not been revealed. But bazooka-armed men in a slit trench can pop out on the blind side of a tank and blast it into a mass of helpless steel. At best a buttoned-up tank has little vision.

In combination with other lethal weapons, the bazooka has proven effective against fortified enemy positions.

—WALTER MCCALLUM.

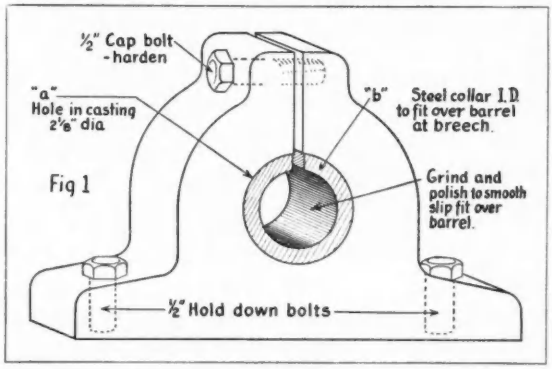
Removing Barrels from Receivers

By CLYDE BAKER

MUCH HAS BEEN WRITTEN on the subject of removing rifle barrels from receivers, and many and weird are the suggestions offered by people who have found themselves faced with such jobs. But here's a tip from one who does it regularly.

Undoubtedly, the best barrel vise commercially available is the Pacific. We're using it with more or less success in the naval repair shops in California. In the arsenals I understand they have a special "compressed air vise" which does the job quicker and with less effort —but naturally it's too elaborate and expensive for the small shop.

The Pacific Vise depends for its gripping power upon a ¾ inch groove cut across the grain in a couple of ¾


½" Cap bolt - harden
"a" Hole in casting 2⅛" dia.
"b"
Steel collar I.D. to fit over barrel at breech.
Grind and polish to smooth slip fit over barrel.
½" Hold down bolts
Fig I

inch thick oak blocks, plus a few other things. Plenty of "armstrong" in turning down the screw is essential so we generally insert an old Lewis machine gun barrel for a lever, pulling it into the general shape of a parenthesis. Friction being essential, we drench the groove with powdered rosin and hope for the best. More often than not it becomes necessary to add a few pinches of sharp sand, or a layer of aluminous oxide cloth around the barrel. Who cares anyway if an old worn-out barrel is a bit marred in removing it from a receiver or a new barrel for that matter to be covered by a handguard!

For my own use on custom work I designed and built a barrel vise like Fig. 1. The simple iron casting, only 1½ inches thick, required a one-piece pattern, the foundry bill for two of which was only $1.10. Chucked in the lathe, the hole "a" was bored 2⅛ inches diameter. The top lug was slit with a 1/16 inch slitting saw on a milling machine (it can be just as satisfactory with a hacksaw!) and fitted with a ½ inch cap screw case hardened in the cyanide pot.

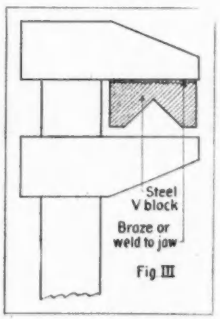


Fig III

Collars "b" were then turned up from 1 inch cold rolled steel with an inside diameter to fit freely over barrel just ahead of the receiver. The outside diameter should fit inside the cast iron "vise." These collars were carefully turned and bored to a close sliding fit over the breech end of the Springfield, Krag, Enfield, Winchester Models 70 and 54, Remington Model 30, Savage Model 99 and Winchester Models 86 and 94. Additional rings as may be needed are easily manufactured.

After boring to exact size for a smooth slip fit, they should be carefully hardened by boiling at red heat in the cyanide pot for at least five minutes, then quickly dumped into cold water. Then they should be carefully tried on the barrels they are supposed to fit and if necessary chucked in the lathe and accurately ground inside to an easy slip fit.

One of these case-hardened rings, slipped over its barrel and inserted into the cast iron clamp will grip the barrel immovably when the set screw is properly tightened. When so gripped, even a new barrel full polished and blued may be inserted without the slightest marring of finish. Just be sure that the inside of clamp ring is smoothly ground and polished.

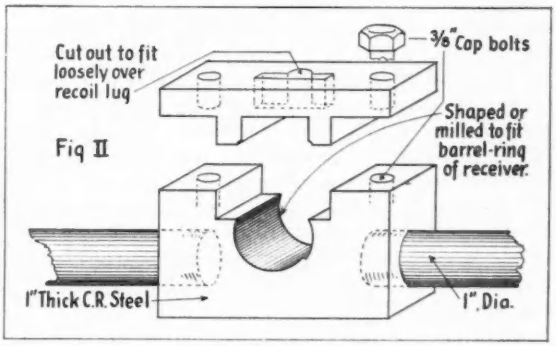


Fig II

With the barrel held as firmly as Gibraltar, fit a suitable wrench to the receiver. Fig. 2 shows a special "put-on and take-off" wrench for Springfields. Carry out the same idea with necessary modifications for 54 and 70 Winchesters, Model 30 Remingtons and others. Fig. 3 shows a simple alteration to a common monkey wrench which adapts it to many actions. The plain, straight jaws protected by strips of belting leather will take care of all flat receivers.

Refitting New Barrels. The fallacy of so-called "burning in" becomes apparent with a little thought. Suppose that the two index lines or witness marks on a barrel and receiver are ⅜ inch apart on the first attempt at seating the barrel. It may be quite showy to smack the wrench handle back and forth loosening and tightening until the witness marks come together on the final effort, but it surely is not good mechanics! For every time this is done a microscopic amount of steel is ground and worn

away on the barrel shoulder and the end of the receiver. The final seating actually begins just *exactly where the last so-called "burning in" stroke ended.* So the barrel is really no more tightly seated in the receiver than it would have been with its original position within 1/32 inch or so of register with the witness marks. There is really no "burning in" about it.

Getting down to cases, when the witness marks on a barrel and receiver are more than 3/8 inch apart on a first attempt at seating the barrel, spot the barrel shoulder to the receiver end by smoking. Then carefully light file or stone until the contact is even all around the barrel shoulder, leaving witness marks within 3/16 inch of each other. (Never file off the front end of the receiver when spotting a barrel to position as all metal to be removed must come from the barrel shoulder.) From then on put pressure on the wrench handle, even if you must put it on with a sledge. Seat that barrel without backing it up if you want a good job!

A *sharp blow* on the wrench handle rather than a hard pull is the thing for breaking loose a very tight barrel from a receiver, also for the final seating of a new barrel. For this purpose the heavy rawhide mallet is ideal, or a 5 or 6 pound sledge with handle cut short and face covered with a piece of old belting to avoid marring the wrench handle.

Always set the barrel as far into the vise as possible with vise right up against the receiver, and fit the wrench onto the extreme forward end of the receiver. Then nothing will be strained or sprung. Be sure that the bolt, extractor and other parts which engage the barrel are removed from the receiver before starting.

Pistol Training Stand

PISTOL AND REVOLVER TRAINING modernized and simplified with a handgun counterpart of the rifleman's Winter Sighting Device is the contribution of Delmar C. Baker of Altadena, California, to plant guard and civilian pistol school instruction problems. The scarcity of ammunition, while still inconvenient, won't stop the training of guards at two large California plants under Baker's instruction.

Inspired by two articles describing the Winter Device in THE AMERICAN RIFLEMAN (January and February, 1942), Baker designed and had built the all-metal stand for handgunners illustrated on this page. Light (43 pounds) and adjustable to the varying heights of students, it is sturdy enough for training in all handgun fundamentals. Made of steel conduit welded together, it can be taken apart for easy movement. The principle, of course, is the same as with the Winter Device—the gun is held rigidly in a clamp while the student attempts to align in the mirror at the far end of the stand the reflection of the movable bullseye with the sights of the gun.

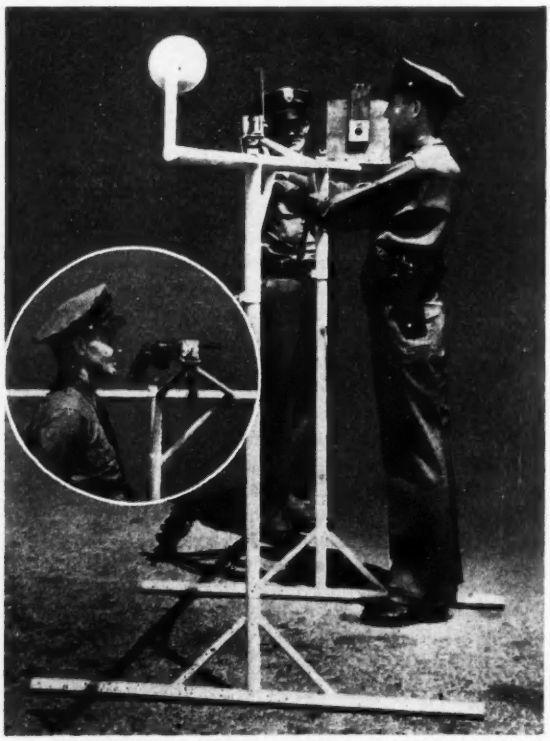
Baker reports slow-fire scores of 75 and 80 by men on the range for the first time. He uses the stand for instruction in the sight picture, triangulation, proper position and grip, and trigger squeeze.

To familiarize students with the sight picture prior to the exercises in triangulation, an auxiliary peep sight (similar to that used on the Winter Device) is fastened to the pistol clamp (see inset) to extend behind the rear sight of the gun. The instructor aligns this peep correctly with the front and rear sights of the pistol and brings the movable bullseye into correct alignment with all three. Thus there can be no mistake as the student learns the correct picture before beginning triangulation.

For the triangulation exercise the peep is moved away, the student assumes the proper position and grip and, by moving the arbor on which the bullseye is attached, gets the proper alignment with the front and rear sights of the gun. The dot is made through the hole in the back of the arbor on paper tacked to the back of the board. As in rifle triangulation exercises, three dots are made to form the triangle, or more than three if "shooting" for group.

The stability of the stand and the ease with which it may be adjusted to the proper height makes it a simple matter to stress uniform position and grip for each shot and to clarify such points as follow-through, cocking the gun, and trigger squeeze. It is impossible, for instance, to bend the elbow while pulling the hammer back if the gun is clamped to the stand. By learning only correct shooting habits the student generally can carry them over to his actual shooting, and errors on the range may be cleared up by sessions on the stand.

This may be the answer to some of the handgun problems of plant guard units, police or civilian school sponsors. With ammunition problems as they are, students might spend considerably more time at dry practice and even come back to the device from time to time to "shoot" a few groups for record.



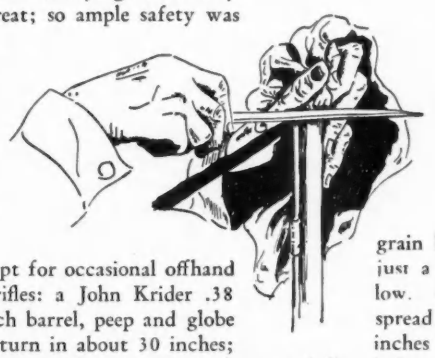
Satisfying Smoke

A modern re-loader turns to the smoke sticks, and finds the substitute more fun than sub-loads

By W. C. OVERSTREET

THREE YEARS AGO we were handloading for and shooting in informal target work such center-fire guns as a Winchester 54 in .220 Swift, Winchester 70 caliber .30-'06, Winchester Model 64 .30-30, and Remington single-shot, rolling block .50-70. Safe facilities for long range shooting were unobtainable so our loads became progressively lighter and distances shorter. Finally we were squibbing around at 50 yards. Of course, there is a certain amount of fun using light charges at short range, but it doesn't take many weeks of that sort of thing to drive a large bore addict to darts and a mug of beer at a cross-roads tavern.

About eighteen months ago we turned to the muzzle-loading, round ball rifle. Here was the answer. With the guns we had, we didn't need over 60 yards. What the rifles lacked in recoil was amply made up in the satisfying smoke they raised. Penetration was not great; so ample safety was had from a backstop constructed of heavy oak. Noise from the muzzle-loaders was not a problem, though it had been objectionable with the center-fire rifles.



Most of our efforts were directed toward developing loads for our percussion lock rifles; so we fired from rest except for occasional offhand competitions. We used three rifles: a John Krider .38 caliber with half-octagon 32 inch barrel, peep and globe sights and six grooves with one turn in about 30 inches; a J. Buswell .42 caliber halfstocked rifle with 29 inch barrel showing six grooves and one turn in about 30 inches also; and a .58 Springfield rifle model of 1861.

The Springfield never received a fair test. Since we had no mold for it, we used 28 gauge pumpkin balls which were 0.55 inch in diameter and bed ticking for patches. Various lubricants were employed: saliva, light oil and tallow. Powder charges between 40 and 65 grains Fg black were tried. Double patching with broadcloth was used on several strings in order to obtain a tighter fit of the ball in the barrel. Accuracy obtained with all loads varied from poor to miserable. When it is remembered that it is possible to get 1 inch groups at 50 yards with this type of rifle if a tight-fitting round ball and thin cloth patch are used, it is better not to mention the 4 or 5 inch groups we made.

Experimentation began in earnest with the Krider. A round ball of 71 grains weight was used with 6 ounce pocket drill as patching. All powder charges were previously weighed and carried to the range in separate, labelled containers. Patching material had been washed to remove sizing and was handled in strips about a foot long by 1¼ inches wide. After the powder charge had been poured into the bore, a spot on the cloth about 1¼ inches square was well moistened with saliva, the damp side of the patch placed upon the muzzle and the ball, sprue up, was centered on the cloth over the bore. With the aid of a short starting rod, the ball and patch were inserted into the barrel until the top of the ball was about 1/10 of an inch below the muzzle. Then the patch was trimmed off flush with the end of the barrel.

A blow upon the starter with the heel of the hand set the patched ball 4 inches into the barrel, and then the ramrod was used to complete the seating of the bullet upon the powder charge. A force of between 10 and 15 pounds was required to send the ball down the barrel; no extra pressure or "whanging" was used after the bullet had come to rest upon the powder charge. Each ball was seated as nearly like those for the previous shots as was possible. Centering the ball on the patch and equal seating pressure have more influence upon point of impact of the missile than do slight variations in weight of the powder charge in these rifles, more especially in those which have a very slow pitch. This method of patching was used with all loads, the only variations were in lubricating materials.

Our first load employed 20 grains of FFg black powder and Winchester Staynless caps with the 71 grain ball. The report was not spectacular, just a rather dull thud. Velocity was quite low. A 5-shot group showed great vertical spread compared to the horizontal: V 2 15/16 inches x H 1⅛ inches. (See Fig. 1.) This was believed due to the erratic velocities developed by a light load. As the powder charge was stepped up by 5 grain increments, the groups became more equidimensional and smaller. Thirty-five grains of FFg black gave nice accuracy. (See Fig. 2 and 3.) The gun's report became a full-throated crack. Forty grains also grouped nicely, but had a tendency to give excess fouling at the breech.

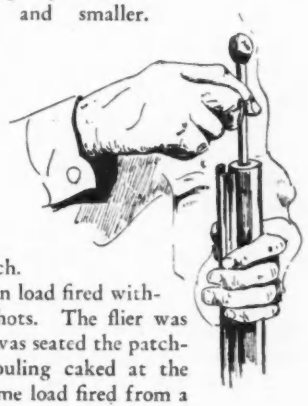
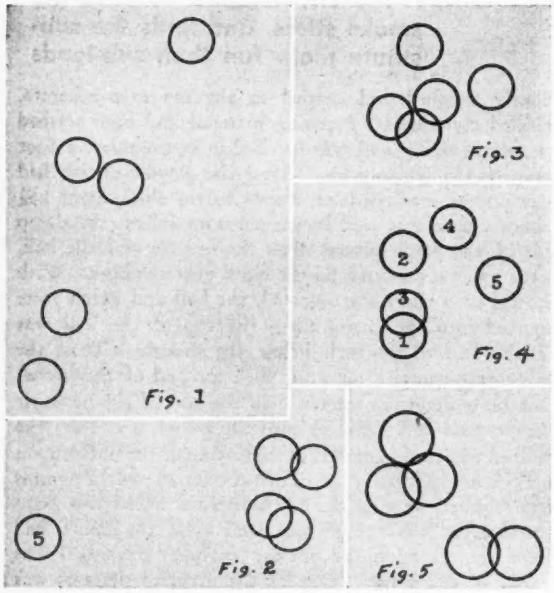


Fig. 2 shows a 35-grain load fired without cleaning between shots. The flier was the fifth shot. When it was seated the patching grated badly on fouling caked at the breech. Fig. 3 is the same load fired from a

bore cleaned after each shot. It goes into horizontal 29/32 inch, vertical 25/32 inch, over-all 15/16 inch. A minimum amount of cleaning was performed. The barrel was wiped with a slightly damp patch followed by a dry one. This was sufficient to prevent caking. Fig. 4 shows a



5-shot group made with 40 grains of powder and without cleaning. The last two balls were felt to grate on fouling caked for 3 or 4 inches at the breech. They opened the group. For all loads spit patches proved more accurate than grease or oil patches.

When the open sighted Buswell was put on trial, 50 grains of Fg black powder were used with an oiled shirt linen patch. From rest at 40 yards seven of those slugs went into a group 5 inches over-all with four in a space 1.2 inches x 1.9 inches. These four shots caused so much excitement the eighth ball was seated in a barrel devoid of powder and the shooting was over for the day. We had not thought it possible for the paper of a standard 50 yard target to catch any two consecutive shots, much less to show any semblance of groups.

By the time we were ready to go out again we had obtained an Ideal round ball mold No. 424101, and had cast a supply of spherical bullets. It was early seen that the 50 grains of Fg were not being completely consumed in the short barrel length of 29 inches. We dropped back to 35 grains of Fg. Oiled patches worked better than spit patches in this rifle. The latter showed slight tears which were not present in the oiled patches after firing. Average 5-shot groups at 45 yards were about 2 inches over-all. This was not so good.

Shirt linen strips which were soaked in molten Ideal lubricant, removed from the melt, drained and cooled, were used for patching during one experimentation. They looked fine. They slid down the bore with the greatest of ease, easier than any patching tried, but they wouldn't group in a bushel basket at 40 yards. Those little pits which did not bother the oiled patch and only made slight tears in a spit patch, simply tore those greased patches into shreds. We never could discover why the rough spots in the barrel tore some patches but not others when the same cloth was used with different lubricants.

FFg black was tried in charges ranging from 30 to 35 grains with the oiled patches. These charges gave a sharper report and higher velocity than similar weights of Fg powder. Groups developed 8 inches higher on the target. Five-shot averages at 45 yards were about 1.4 inches over-all. Thirty-five grains FFg consistently blew the hammer back to half cock (the mainspring was weak), so a working load of 32 grains was chosen. An average 45 yard group with this load is seen in Fig. 5.

Though the accuracy developed is not amazing, these muzzle-loading rifles give us more pleasure for our short range work than sub loads in the big center-fire calibers and are more instructive. One really has to work to fire 30 rounds in an afternoon. Each shot is preceded by such attention to detail that the anticipation is at least as enjoyable as the actual shooting.

Booby Traps

(*Continued from page* 12)

Electrical devices, however, are not fashionable in this war. Batteries may corrode, or connecting wires may be cut. Therefore, detonators set off by mechanical means are usually used. They remain in place, permanent, silent, deadly devices which are good today, tomorrow or six months from now.

One of the little numbers coming out of this war, and also one giving plenty of play to American ingenuity is the double mine, combining the two types—anti-personnel and anti-tank. Explanation of the double mine may give an understanding of why Montgomery's British didn't catch up with Rommel soon after the battle of El Alamein.

The British knew the canalized approaches to Rommel's retreating forces would be strewn with anti-tank mines. They also knew "fox of the desert" would mix in among his anti-tank mines a few camouflaged anti-personnel mines to discourage British mine detection outfits. Grim experience had taught them. They have devices to locate them as we have, and when the British had detected an anti-tank mine and set out to defang it "blooey" would go an anti-personnel mine beneath or alongside it. The thing became slow, discouraging work.

It can very well be imagined that it slowed the British advance.

American soldiers know all these things. They're quick to pick up the newest things in war and turn them on the enemy. Wherever the war is fought the enemy is going to learn the hard way that it is far from a one-way racket.

If there is one thing the Army doesn't want in the booby trap business, it is standardization. The more diversified and ingenious the installation, the more effective it will be. So now, American soldiers are playing with these cute little gadgets in many training areas here and abroad and toying for keeps on many fronts. In training they aren't hurt when a firecracker goes off under the firm tread of a GI boot. But they know the score won't be so innocent in a combat area.

KILLING POWER

A COMPREHENSIVE STUDY OF SMALL ARMS PROJECTILES AND THEIR EFFECT ON MAMMALS

By E. BADEN POWELL

Here is one of the most thought-provoking articles it has ever been our privilege to bring our readers. Originally intended for publication in book form, the author kindly considered the serious-minded small arms readers making up a large percentage of RIFLEMAN subscribers, and offered the manuscript to us for publication as a serial.

The author's investigation is unbelievably comprehensive and extends over a long period of the most careful research and observation. His approach is that of the scientist which only naturally stems from a distinguished career as consulting engineer in geology, mining, metallurgy, chemistry, physics and other allied fields.—EDITOR.

THE KILLING POWER of all projectiles fired from sporting arms can be compared and expressed in terms of the *weight of animals* which, upon being shot, will immediately be rendered unconscious and die before consciousness returns.

The following treatise, commenced in 1927, is offered in support of this contention. It compares the capabilities of various guns and loads, and shows for what animals they are best suited. It attempts to reconcile and explain the reasons for some of the controversies and alleged discrepancies that seem apparent between the theoretical killing power of projectiles and the actual results obtained in practice.

To those who may consider these data entirely theoretical, it should be stated that the writer was taught to make and hunt with bows and arrows by a Chief and tribe of Shoshone Indians as early as 1907. He was made proficient in the use of firearms as early as 1910 by members of his family, some of whom were pioneer stock men who had hunted extensively over the vast game ranges of North America. Some of them had great experience in African game shooting as well.

Wide variance of opinion expressed on certain phases of the effects of projectiles on animals incited the writer to augment reading and consultation with actual experience and observation. Time was opportune and animals were plentiful in the wild and sparsely settled areas of the Northwest until 1920, and Old Mexico and the Southwest until 1926.

A diversity of guns were tested with a variety of cartridges to represent the killing power of about all the loads in use throughout the world. An estimate of the number of animals shot and observed shot by the writer, and of the guns used and observed used by the writer is enumerated in Table I.

To those who may consider this empirical, or based upon observation alone, it should be stated that the writer has studied the comments of Cumminghame, Selous, Cottar, Sutton, Roosevelt, White, Whelen, Askins, Keith, Curtis, Crossman, Goode, Caswell, Cody and a great number of other hunters and experimenters of wide experience. These, too, include the old timers of black-powder days, who recorded the observed effects of the various projectiles on animals. The writer has also observed, hunted and consulted with several professional predatory animal hunters and wild horse exterminators, including Kyle, Stites, Springer, Guthrie and Ringling. The guns used by these hunters and the variety of animals shot included a wide category of both.

These investigations inspired the writer to begin publishing his observations in *Field and Stream* about 1920, in an attempt to promote the use of adequate loads in order to reduce crippling, and to effect more humane killing of animals. This was followed up until 1926 in that and other publications as a game conservation measure to reduce the loss of fatally wounded animals. Necessity, desire and opportunity due to his profession as a consulting geologist and industrial engineer have caused the writer to delve into the mysteries of many sciences, a knowledge of several of which has aided materially in analyzing the multitude of diverse factors included in interior and exterior ballistics, and the killing power of projectiles, namely,—mathematics, physics, chemistry, biology, metallurgy and engineering.

Throughout the vast file of information on the subject explored by the writer, there exists one outstanding factor, i.e., a general agreement in regard to the size of animals that were quickly killed under specific conditions by projectiles possessing certain properties. However, in attempting to explain the reasons therefor, a wide diversity of opinion exists between the different hunters. In other words, the results observed by most of the hunters who have had the greatest amount of experience have been similar, but the theories given have not. Following is the writer's analysis of some of the phases involved.

Primarily, death to mammals is caused by suffocation, which can be induced by the shutting off of the blood supply (oxygen) to the cells of the body as a result of hemorrhage, or by hemorrhage and shock, or by shock alone, due to destruction of a certain proportion of the animal's living tissue. The amount required to be destroyed is dependent upon the kind of tissue affected; whether brain, ganglionic, nerve, corpusculor or connective. It is also dependent upon how it is destroyed, whether by direct injury to the brain, ganglion or nerves, or transmitted injury through the nerves, bones or fluid to the vital tissue. It is dependent, too, upon the time in which death ensues after the tissue has been destroyed. When that portion of the brain, ganglia, or nerves, such as celiac ganglion, which controls the heart action is injured sufficiently to cause the heart to stop beating, suffocation ensues, as when the heart is stopped by direct destruction.

BRIDGEPORT, CONN., MAY 1943

Rifle Remington

Possibles and Impossibles

by **FRANK J. KAHRS**

One of my readers recently wrote to me on the subject of plinking. He wasn't against plinking, but he said that thoughtless shooters litter up farmers' pasture lots shooting tin cans, broken bottles and that sort of thing.

You can get a lot of fun and good experience out of shooting at various objects set up in a safe and proper place, and eventually some of these so-called "plinkers" get around to a rifle range where safety is the first rule and where they can enjoy good shooting, good fellowship and really get somewhere in the shooting game. My correspondent cites one incident that confirms this:

> "One Sunday about three or four years ago I was out in a little valley about 40 miles from Los Angeles, doing some smallbore target shooting. A car came into this valley and stopped about fifty yards from where I was shooting. A man and boy got out of the car. The boy opened the car trunk and brought out a box of bottles and burned-out electric light bulbs. He began placing these at various ranges from twenty feet to twenty-five yards from where their car was parked. While the boy was putting out these targets, the man was loading a small .22 caliber rifle.
>
> "I sat on the bumper of my car and watched them pulverize their glassware. In about half an hour they had finished.
>
> "The man came over to where I was sitting and greeted me with a very cordial 'Hello there. How's the shooting? Got a pretty fine shooting outfit there.' 'Yes,' I replied, 'and I get a lot of pleasure out of using it.'
>
> "He asked me a lot of questions regarding my rifle, scope sight and spotting scope, also as to the distance to my target frames. I invited him to try out my rifle (Remington 37). He was rather backward about it, but after I had explained the use of it to him, he accepted my invitation. He fired two strings, and after he had finished, said, 'You know, I believe I would like this target shooting game.'
>
> "Today he is one of my best friends. He is the owner of a Remington 37 and his son has a 513T and they both are now ardent target shooters."

This is a good example of how easily plinkers may be converted into dyed-in-the-wool target shooters. Like the man and boy referred to by my correspondent, there are plenty of others whose shooting activities may be directed toward target practice and competition through courteous and thoughtful advice by experienced riflemen.

SALVAGE ALL THE EMPTY BRASS YOU CA

There's probably no more patriotic grou sportsmen in the world than America's shoo For today's sportsmen shooters are carryin an American tradition as old and as cherishe America itself.

Perhaps that explains why shooters have tributed literally tons of metal to the scrap d Empty brass. Lead dug from target butts. shell heads. Lead scraped and reclaimed trap shooting grounds.

It stands to reason that a careful combi the shooting grounds will yield more val metal than a casual once-over. Is *your* club a thorough salvage job?

Remember, only a few .22 cartridge case a couple of shot shell heads—will supply e metal for a sub-machine gun cartridge case.

THERE'S ONE IN EVERY CLUB . . . . . "*Lend-L*

Remington News

A PAPER FOR PEOPLE WHO SHOOT

I'm sorta in the Army now!

Dad asked me how would I like to be in the Army, and I said I'd like it swell, so he said okay, soldier, you're now on coyote detail.

Well, I'd never thought that knockin' off coyotes had anything to do with the Army, but Dad said it did, and I can see why now.

Take this fellow here, for instance. He's raised heck with our stock for a long time. And that meant less meat for our armed forces, who are knockin' off some even bigger coyotes on their own account.

Well, this coyote here was pretty smart . . . up to today. But today I found a fresh track of his, and the wind was right. Old Betts and I found him, and pow! One shot from my Remington . . . and one less critter.

I know Dad is gonna be mighty pleased about it, and of course I am, too. It shows I'm a pretty slick shot . . . if I do say so!

* * *

Here at Remington we are doing everything in our power to help smack down those "even bigger coyotes" . . .

—*during 1942, Remington produced enough small arms ammunition to fire more than 300 times at every Axis soldier.*

—*during the last 7½ months of that year alone, Remington produced more small arms ammunition than the entire country produced during all four years of World War I.*

—*thousands upon thousands of military rifles were speeded to our armed forces all over the world.*

—*and Remington has received four Army-Navy "E's."*

The many thousands of us who are Remington are grateful that we are able to serve our country. And after the war is won, we will be glad to serve our sportsmen friends again with the famous Remington line of sporting arms and ammunition. *Remington Arms Company, Inc., Bridgeport, Conn.*

Remington

DU PONT

TABLE I

BODY TISSUE RESISTANCE

Family	Type of Animals — Kind	Skin and Belly L=Low	Muscle and Chest M=Medium	Shoulders, Hips and Head H=High XH=Extra	Number Shot and Observed by Writer
	Rabbits Birds, Rodents	LR	LR	LR	10,000
Canine	Dogs, Wolves, Coyotes, Foxes	LR	L	M	573
Suina	Javelina, Boars, Pigs	LR	MR	MR	65
Feline	Tigers, Lions, Jaguars	LR	LR	HR	106
	Leopards, Pumas, Lynx	LR	MR	MR	
	Wildcats, Ocelots	LR	LR	MR	
Cervidine	Deer, Caribou	LR	LR	MR	31
	Moose, Elk	LR	MR	HR	
Ursine	Bears	LR	MR	HR	2
Equine	Horses, Asses, Zebras	LR	MR	HR	435
Antilopine	Larger African Antelope	LR	MR	HR	
	American & Smaller African Antelope	LR	LR	MR	2
Pinneped	Walrus, Seals, Manatee	LR	MR	HR	23
Bovine	Oxen	LR	MR	HR	869
	Bison	LR	MR	HR	
	Buffalo	LR	MR	XHR	
	Sheep, Goats	LR	LR	MR	
Pachyderm	Elephant, Hippo, Rhino	MR	HR	XHR	
Cetacean	Whales, Dolphins, Porpoise, Narwhal	MR	HR	HR	

Death is brought about most quickly by the destruction of certain vital tissue, such as the brain, upper or forward spinal, and certain other ganglia, which requires the least injury. A .22 short bullet fired from a pistol at ten yards range will kill a 1000-pound steer as quickly as a .600 caliber elephant rifle, provided the .22 bullet properly penetrates the brain.

The seat of life in animals seems to be near the point where the spine and brain come together, the medulla oblongata. When some other part of the nervous system, however remote from the brain, has been injured violently enough to cause death by "transmitted nerve shock" to the brain, the medulla oblongata usually appears as if it has been injured directly and its nerves and cells short-circuited, or burned up from carrying the overload of shock, as in the case of electric wiring which failed due to a sudden overload of electric energy. When death has been caused by "hydraulic transmitted shock", the blood vessels throughout the entire brain usually appear enlarged or ruptured, in addition to the coagulated and injured appearance of the medulla oblongata.

When an animal is frightened, angry or insane, considerably more tissue must be destroyed to kill it as quickly as when the animal is calm unless injured in the brain or

TABLE II

	Cartridge	Powder	Projectile	Velocity Muzzle	Velocity 300 Yds.	Loss 300 Yds.	Distance at which r. v. is 1500 fs.
1.	.22 Long RF	Factory	27 Gr. HP	1395	1010*	28%	100 Yds.
2.	.22 Short RF	"	27 " HP	1155	925*	20%	100 Yds.
3.	.220 Swift	"	48 " SP	4140	2265	45%	465 Yds.
4.	" "		48 " SP	2070	1050	48%	
5.	.300 Magnum	"	180 " HP-BT	3060	2200	28%	615 "
6.	" "		180 " HP-BT	1530	1100	28%	
7.	.30/30 WCF	"	170 " SP	2200	1470	33%	285 "
8.	" "		170 " SP	1100	900	18%	
9.	.45/70 WCF	"	405 " SP	1310	985	25%	
10.	" "		405 " SP	655	573	12%	
11.	.22 Savage	"	70 " SP	2780	1950	30%	505 "
12.	.250 Savage	"	87 " SP	3000	2190	27%	625 "
13.	.256 Newton	Newton	123 " SP	3100	2495	19%	910 "
14.	.280 Ross	Ross	145 " PP	3050	2440	20%	875 "
15.	.30 Newton	Newton	150 " SP	3200	2475	22%	800 "
16.	.22–.348 Miller	54 Gr. #4064	40 " 8-S SP	6000	2800	58%	550 "
17.	.257 Magnum "MVF."	60 " #4064	87 " 10-in. Twist	4000			
18.	" " "	60 " #4064	87 " 14-in. Twist	4250	2950	31%	910 "
19.	.30/06 Govt.	F.A.	165 " Armor Pcr.	2700	2130	21%	715 "
20.	.300 Magnum "PMVF."	92 Gr. #4350	172 " M-1	4000	3350	16%	1365 "
21.	.22–60 Miller	65 " #1185	40 " Solid Bronze	7000			
22.	" "	60 " #4064	50 " " "	6000			
23.	" "	62 " #1185	70 " " "	5000			
24.	" "	60 " #4350	90 " " "	4000			
25.	3" Cannon		13 lbs.	2700			2000 "
26.	6" "		105 "	2600			7000 "
27.	8" "		260 "	2750			11000 "
28.	12" "		870 "	2900			19000 "
29.	16" "		2100 "	2600			22000 "

* At 100 yds.

forward spine. When an animal is in a state of mental agitation, caused by either fear, passion, anger, hate or nerve, or brain disease, or, in a predatory animal, by hunger, its blood is charged with greater than normal quantities of energy-producing substances and pain-inhibiting drugs. This is probably brought about by the suprarenal glands discharging larger quantities of adrenalin, when stimulated by nerve impulses that act instantly and involuntarily in fear, hate, etc.

These abnormal amounts of gland substances in the blood stream immediately bring about the shutting off of much of the blood supply to some portions of the body, such as the internal organs. They reduce the flow of internal and external hemorrhage, and increase the blood supply to all muscle cells of the body, furnishing them with much greater quantities of fuel.

This accounts for the temporary superhuman or abnormal strength of men and animals under such conditions. It also "drugs" or deadens the sensory (feeling) nerves so that less shock or pain is transmitted to the brain. This accounts for the fact that serious wounds may be inflicted during a fight without the victim's being conscious of them until later. It is probably also the reason that animals in the mating season are so truculent, always ready to fight, and while in that condition seem harder to kill. Likewise, when angry, as in charging, or when insane, as when afflicted with rabies, or when in flight due to being frightened or wounded, it requires appreciably greater killing power to stop them.

For example, let a body-shot deer go until he gets over his fright enough to lie down and he will soon bleed to death. Follow him too soon, keep up his fright, and his blood trail will likely end and he will probably lead you a long and merry chase. This difference may vary in animals of the same kind as well as in different kinds of animals, and may amount to as much as several times

TABLE II (Extended)

Energy Muzzle	*Trajectory Height*	*Range*	*Winddrift 15 MPH*
1825 fp	3.5 In.	300 Yds.	.99 ft.
3745 "	6.0 "	" "	.93 "
1830 "	12.0 "	" "	1.58 "
1545 "	32.5 "	" "	2.00 "
1200 "	7.0 "	" "	1.05 "
1740 "	6.0 "	" "	.92 "
2630 "	5.0 "	" "	.55 "
3000 "	5.2 "	" "	.59 "
3445 "	4.9 "	" "	.63 "
3190 "	2.0 "	" "	.90 "
3485 "	3.0 "	" "	.62 "
2785 "	7.0 "	" "	.73 "
6125 "	2.9 "	" "	.32 "
735 ft. tons	251 ft.	4,000 Yds.	67.00 "
	118 "	" "	15.00 "
	80 "	" "	6.00 "
110,400 " "	35,700 "	39,600 "	595.00 "

normal, depending upon their physical condition. All cats (leopards, lions, tigers, etc.) possess unusually potent suprarenal glands. They are particularly hard to kill when angered, and are generally spoken of as possessing "nine lives", or "greater tenacity of life".

Much has been written about the greater or lesser tenacity of life of different animals. While it is true that reptiles, as well as some other forms of life, retain "life" or reflex action of their muscles long after their brains or other vitals appear to have been destroyed, they are cold-blooded organisms and belong to a different life classification than game animals which are hot blooded, and in which "rigor mortis" or stiffening of the muscles sets in as soon as the body heat is dissipated. The time required for this to take place in cats is no longer than in other hot-blooded animals after a vital part has been destroyed. Several factors must be considered to properly appraise the facts.

When any one of several vital parts of any hot-blooded animal's body is injured by a bullet sufficiently to cause death in a certain period of time, an identical injury of the same magnitude and proportion to any other kind of hot-blooded animal's similar vital part will cause death in about the same length of time, provided the animal is in the same state of mind at the instant the injury is inflicted. However, it may take a different *type* of bullet of the same weight and impact velocity to inflict an injury of the same extent to the same vital part in another species of animal of the *same* weight, and therein lies the answer. This is because the bodies of different kinds of animals are made up of different proportions of tissues possessing different densities, although they may be of similar weight, in spite of the fact that from a standpoint of anatomy, all hot-blooded animals are fundamentally the same in construction. This can best be observed and compared in a zoo.

Note that the body of a 150-pound leopard looks, and by measurement actually is different in dimensions and in shape than that of a 150-pound wild boar. The boar in turn differs from a 150-pound deer. Likewise, a 400-pound lion is different from a 400-pound bear, which in turn is different from a 400-pound elk, and the distribution of muscular and bone tissue is not in proportion to their size. The average hunter who thinks he can judge the weights of some of the small-appearing, denser-bodied animals in any zoo may get the surprise of his life merely by asking the superintendent, who usually has the animals' shipping weights.

Some animals have comparatively tougher hides and thicker bones which protect the brain, spine, nerves and other vitals better, resists shock-transmission more, and resists bullet penetration to a greater extent than animals with bodies of lower density tissue. Therefore, if the same weight bullet, at the same velocity is expected to kill an animal of the same weight whose vitals are protected by a denser body, in the same length of time, a bullet so constructed as to inflict a similar injury to a similar vital must be used. In other words, a bullet must be used that will penetrate to the vital before blowing up. (See Table I.)

Any argument concerning the relationship between velocity, energy and killing power, and their effects on animal tissue should include the following facts, viz.: doubling the muzzle velocity of a projectile does not necessarily double its remaining velocity at all distances,

or at any distance beyond the muzzle. The resistance of the air to the projectile's passage while it is travelling at the higher velocities may be as low as the 1.55th power, while at velocities approximating the speed of sound may be as high as the 5th power of its velocity. Its energy varies directly as the square of its velocity. Hence, doubling the muzzle velocity of any projectile gives it four times the muzzle energy.

But the muzzle velocity of most sporting bullets in use at the present time, due to their shapes plus the above air variables, causes them to encounter considerably more than four times the air resistance during their flight. This dissipates their energy proportionately faster, and the bullets reach the average distance at which game is shot, possessing somewhat more than three times, instead of four times, the energy they would possess had they been fired at one-half the velocity, per se Table II.

However, when a missile travelling twice as fast and, therefore, possessing FOUR times as much energy does strike a living animal's body in a similar place, with the animal in a similar physical and mental condition, it does not possess the proportionately greater ability to kill an animal weighing four times as much. Rather it possesses only the ability to kill as quickly an animal of about twice the weight. And whereas most projectiles in use at the present time, due to their lower striking velocities, have greater killing power because of the size wounds they inflict and the tissue destroyed than they do by transmitted bone or hydraulic shock; therefore, the killing ability of most sporting bullets, due to velocity alone, is about directly proportionate to the missile's striking velocity and NOT its energy. This is because living animal tissue resists the passage of a missile in similar manner to a plastic (semi-solid) or fluid and consists, in addition to a large proportion of water, of considerable quantities of fats and some solids. This results in a spongy, somewhat elastic mass, which effectively retards the progress of the missile in reaching vital cells and nerves. When the velocity of a missile passing through a plastic, is increased, the resistance to its passage increases as a higher power of its velocity.

Therefore, if the velocity of a missile is twice as great when it begins entering a living animal, it will possess four times the energy, *but* it will meet eight, or more, times the resistance and actually may not penetrate sufficiently to destroy as great a quantity of tissue, unless constructed to expand and hold together properly at double the velocity. In this latter case the missile would inflict death to an animal possessing about twice the weight of living tissue in the same length of time.

However, when a missile strikes in a fluid in direct contact with nerve or brain cells through a hydraulic system, then sufficient of the energy may be transmitted to the brain cells to cause death by shock or injury to them, provided the missile blows up on impact.

For example, the circulatory system (62,000 miles, in man, of veins, arteries, etc.) is connected with the brain, and if the blood pressure in the system is suddenly raised sufficiently to cause the blood vessels in the brain to expand or rupture violently, sudden death ensues. If a force of sufficient magnitude is suddenly applied to some portion of the viscera, it will press upon and transmit shock to all of the nerves and ganglia in contact therewith, such as the nerves behind the stomach (celiac ganglion or solar plexus), which, when hit, "knocks the wind out of you", and also to all the veins and arteries in contact with the liver, kidneys, spleen, and other viscera.

Some of these blood vessels connect with the brain, lungs and other vitals of the body, and will carry some of the force to the latter in the same manner as the pressure is carried from the foot-pedal cylinder to the hydraulic brakes of an automobile. The blood vessels in the brain and lungs seem to require less pressure to rupture them than those reinforced by thicker walls or by surrounding muscular, bone and connective tissue.

The writer has observed the injured condition of the brains of many animals, weighing from one to over 1000 pounds, that had been shot in the viscera with bullets which had imparted sufficient energy to transmit such shock. Unconsciousness was effected immediately, often followed by a few seconds of severe convulsions before the relaxation of death, in similar manner to that of an animal shot directly in the brain. This effect should be referred to as "hydraulic transmitted shock".

(To Be Continued)

Next month's installment continues the discussion of "hydraulic transmitted shock" with the author's analysis of various type projectiles on large and small game. The series will extend over several issues and will include additional tables and charts on results observed.

Guns Tested By Writer	*Other Guns of Similar Killing Power*
28 Gauge	.410 Bore
20 "	
16 "	
12 "	
10 "	
.22 Short	.22 Long
.22 Automatic	
.22 Long Rifle	
.22 Special	
.22 Hornet	.218 Bee
.22 Savage	.22 Neidner; .22 Lovell; .219 Zipper
.220 Swift	.22 Varminter
.25 Auto-Pistol	
.25/20 WCF	
.250–3000	.257 Roberts; .240 Magnum; .242 Magnum
.25/36 Marlin	.25/35 WCF; .25 Remington
.256 Newton	6.5 M/M Mann., 7 M/M Mauser; .26 B.S.A.
.280 Ross	.270 WCF; .275 Magnum; .280 Dubeil
.30 Luger Pistol	7.63 M/M Mauser Pistol
.30/30 WCF	.30 Remington; .303 Savage
.30/40 Krag	7.62 M/M Russian; .303 British; .348 WCF
.30/06	7.65 M/M Mauser; .300 Savage
.300 Magnum	8x75 M/M Mauser; .30 Newton; .318 Wesley Richards
.32 Auto-Pistol	.32 S & W Pistol
.32/20 WCF	
.32 Special	.32 Remington
.32/40 WCF	.32 WSL; .35 WSL; .351 WSL
.35 Remington	.33 WCF; .401 WSL
.35 Newton	.333 Jeffery; 9 M/M Mann.; .35 WCF; .375 Magnum
.357 Pistol	
.38 Auto-Pistol	9 M/M Luger
.38 Special	.38/44 Pistol
.38–55 WCF	.38/56 WCF; .40/65 WCF
.38/72 WCF	.40/72 WCF; .40/82 WCF
.405 WCF	.400 Whelen
.44/40 WCF	.38/40 WCF
.44 Spcl-Pistol	.44 S & W Russian; .45 Colt
.45 Auto-Pistol	.455 Webley Pistol
.45/70 WCF	.45/60 WCF; .45/75 WCF; .45/90 WCF; .45 Sharps
.450 Express	.400; .404; .465; .470; .475, .476 Exp.

Scope Sights for War

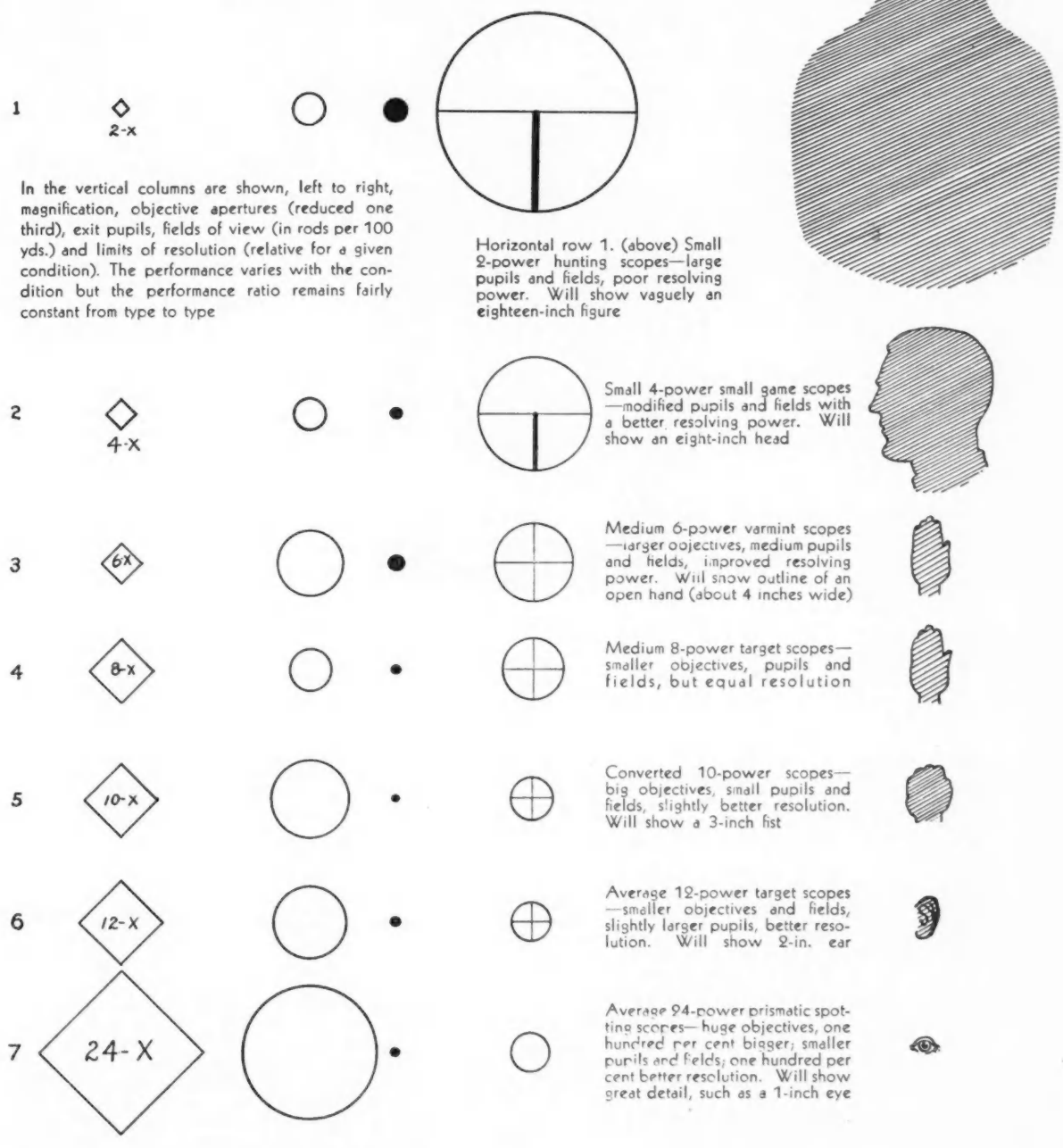
(*Continued from page* 20)

be cleared. Even the hinged mount will not do here because the clip is automatically ejected when emptied of its last cartridge. The scope *could* be offset an inch to the left as Stith and others have done it. I think the proper solution for the Garand is the side-bracket mount holding the scope barrel to one side but using an offset prism eyepiece to bring the eyepiece over to its normal centerline position as in the Charles Dake patent. This eyepiece could be hinged and tipped out of the way when the military peep sight is to be used.

Any of these outfits are suitable for the shorter hunting type scopes. For the longer small game scopes, medium power varmint scopes or target scopes the only practical mounts, outside of the relatively frail target mounts on dovetail bases, are the Stith mounts shown in several cuts herewith. So far as we know, there are none others available for these longer scopes.

Average Characteristics and Observed Performances of American Scopes by Types

In the vertical columns are shown, left to right, magnification, objective apertures (reduced one third), exit pupils, fields of view (in rods per 100 yds.) and limits of resolution (relative for a given condition). The performance varies with the condition but the performance ratio remains fairly constant from type to type



Horizontal row 1. (above) Small 2-power hunting scopes—large pupils and fields, poor resolving power. Will show vaguely an eighteen-inch figure

Small 4-power small game scopes —modified pupils and fields with a better resolving power. Will show an eight-inch head

Medium 6-power varmint scopes —larger objectives, medium pupils and fields, improved resolving power. Will show outline of an open hand (about 4 inches wide)

Medium 8-power target scopes— smaller objectives, pupils and fields, but equal resolution

Converted 10-power scopes— big objectives, small pupils and fields, slightly better resolution. Will show a 3-inch fist

Average 12-power target scopes —smaller objectives and fields, slightly larger pupils, better resolution. Will show 2-in. ear

Average 24-power prismatic spotting scopes— huge objectives, one hundred per cent bigger; smaller pupils and fields, one hundred per cent better resolution. Will show great detail, such as a 1-inch eye

POWDER SMOKE: READERS COMMENTS THE NEWS DESK

RE-LOADS . . .

LATE "ARMS CHEST"

Editor: Minot, North Dakota.

For the last three months I have been answering ads by telegraph, air mail and long-distance telephone trying to obtain some .22 Hornet shells or some components for the same.

Each time we are informed that the shells were sold from two to three days before and that has happened at least eight or ten times. These telegrams are sometimes sent just a few minutes after we receive our magazine and it is quite disappointing to find that the shells have been sold three days before. This goes to show that we are not receiving our magazine when we should be getting it.

The fellows to the east, as far west as Minnesota and Wisconsin, are receiving their magazines about three days earlier than we are here which puts us at a disadvantage when it comes to the Arms Chest.

I know some of this is due to transportation facilities. You stated in previous issues that your magazine is mailed so that each subscriber receives his copy at approximately the same time and I would suggest that ours in this part of the country be mailed about two or three days earlier.

I don't mean this letter to criticize but to suggest a way around it. The Arms Chest in times like these is a lifesaver and I wish to express my appreciation for your record of the past.

M. M. Kemble.

We sympathize with member Kemble, the mailing schedule however is not at fault. In these times eastern subscribers frequently receive their magazines later than those in the far west (see notice on Page 1 of "Arms Chest").—ED.

LOOK OUT ADOLF

Editor: Meeker, Colorado.

Private Robert Hopson of "A" Battery, 69th Armored Artillery Battalion has achieved an enviable record according to recent tabulations made by Major Hetherington, that acclaimed him as the best shot in the Battalion. Present records show that Hopson has qualified in the use of every weapon except the 45 calibre pistol. Hopson attained the rating of expert with the Thompson sub-machine gun in his first attempt. Later he fired the 30 calibre machine gun and qualified as a first class gunner. When he was called upon to fire the 37mm anti-tank gun, he tallied more hits than any man firing the course. In a recent pistol qualification trial run his marksmanship ran true to form when he totaled the highest score among those firing.

Raymond D. Woolley.

Another proof of our contention that rifle marksmanship is basic preparation for any kind of shooting. Private Hopson was a member of the Meeker, Colorado Rifle and Pistol Club before entering the Army.—ED.

"RIFLEMAN" GOES TO WAR

Editor: North Africa.

The November issue reached me just as we were starting to the front lines. I carried it along. Shortly we were engaged in a major battle and soon found ourselves completely surrounded by the Germans. We fought it out for 36 hours, then received orders to break through to our lines under cover of darkness. Naturally we were forced to leave and destroy part of our equipment. I discarded all of my gear except rifle and ammunition and a few toilet articles carried in my pocket. THE AMERICAN RIFLEMAN I carried inside my field jacket and out we came from nine miles behind the German lines.

Since then I have made use of "The Old Coach" on combat firing in training my unit, and believe me that's the real dope.

Capt. Edward E. Reynolds.

SOLDIER'S VIEWPOINT

Editor: Nottingham, N. H.

Home on my first furlough in a year's service, it has been very pleasant to read the copies of the A. R. which have been on file awaiting my return. But it has been disturbing to note that the solons (a certain percentage) believe in various measures of registration, and even of repression and elimination of privately-owned firearms. Personally, it is one of the freedoms which I feel I am entitled to, and loss of such a privilege would make me feel that my efforts in the service have been in vain.

How any intelligent person could believe that a measure restricting firearms, or preventing their use by responsible private individuals can do other than weaken us militarily in the future, is beyond comprehension. It seems that the N. R. A. remains the only steadfast guardian of our rights in that respect. May I ask that you continue your efforts to insure us our former privileges when we return to civilian life? While service in the Army is not a burden, I feel I am not a soldier by instinct and wish to return to a close pursuit of former routine.

Sgt. Edward Foss.

ABOUT FIREARMS LAWS

Editor: Cleveland, Ohio.

I am an ardent participant in the sport of rifle marksmanship and recently purchased a .22 caliber Woodsman automatic pistol for target shooting, hunting and protection of personal property.

Friends have told me that a permit is needed to own a pistol, but I have hesitated in applying for one because I have also been told that the police or authorities would take the gun away from me if I didn't have a good enough reason for having one in my possession.

Now I am an upright, honest citizen and would like to obey the law if the law requires that an owner of a pistol shall have a permit, but I also do not wish to have the gun taken away from me in trying to abide by the law, for the price I paid for the gun was rather high in my estimation; so I take this opportunity in asking whether or not what I heard is true and how I might go about obtaining such a permit if necessary. Knowing of your endeavor to encourage marksmanship and promote the proper handling of arms, I thought that it would be the best place to get the needed information and so it is that I take that liberty. I would also like to know the address of a National Rifle Association club in my city which I might join.

Bernard F. Mueller.

There is no Federal law requiring a license to own target or sporting firearms. Only a few of the states require such a license and Ohio is not one of those states. In practically all states a permit to carry concealed weapons is required, however.—ED.

WOODEN BULLETS

Editor: Salem, Oregon.

Just a hurried note to say that the use of wooden projectiles by the Nipps in the Pacific Area is not the first time, if my information is correct.

I have read, long years since, that wooden darts called "sprites" to distinguish them from the shaft of the archer, or the quarrel or bolt of the crossbow were made in quantities for use in the muskets of the men in the English ships, to aid in repulsing the Armada in 1588. It's said they were more accurate than the round ball of lead and had greater destructive effect.

Donegan Wiggins.

THE LORD HELPS THOSE—

In February under the heading "Pass the Ammunition" we printed the plea of J. E. Moore of Minneapolis for .30 Caliber ammunition. The following letter from B. E. Hodgdon may be of interest to Mr. Moore and others.

Editor: Merriam, Kans.

Please tell Mr. J. E. Moore, of Minneapolis, Minnesota, to advertise in the RIFLEMAN for his .30 fodder. He'll get it!

Or, I will reload a pocketful for each and every one of his backwoodsmen. I don't get enough gasoline to chase jack rabbits over these Kansas prairies—so they can have it.

B. E. Hodgdon.

THANKS TO THE FELLOWS

DEAR ———:

Hi feller! Just finished at the range. Been very busy for the past week or so. Fired preliminary Friday and hit expert. Fired record Saturday and beat the previous score by 5 points. Have the highest score in my platoon and came within 8 points of beating the record for the range here. Won the Expert Marksman Medal and $5.00 more a month. That will come in handy. Made expert with pistol also. Did the same with the .22-cal. rifle here and the Reising submachine gun.

My name was taken for rifle instructor here on the range and I am going to do all I can to get out of it. I want a chance to go to sniper school.

I wish you would tell the fellows at the club that I'd never have been able to make it if I hadn't the practice and instruction they gave me. The positions are the same and I knew how to get into them right from the start. Therefore, I spent most of my time on the trigger squeeze. I do best, believe it or not, at rapid fire from 200 and 300 yards. We don't shoot rapid fire from farther distances. They give us one minute and five seconds to fire sixteen rounds at 200 and 300 yards rapid fire. That includes dropping into position, sitting, kneeling or prone and firing eight, reloading with clip and firing the other eight. Once I get into position the rifle does not kick out. It jumps back and up but returns to the original position. At first the kick and the noise bothered me, but now I don't hear the fellow next to me fire at all.

Say hello to Milton Butler for me, and Driscoll, Baker and Martin (all members of the Forty-Third Street Rifle Club). Thank them for that booklet; it comes in handy.

Your friend,

George.

George Candea is a U. S. Marine from the Forty-Third Street Rifle Club. The above letter is to a fellow club member and points its own moral.—ED.

MUCH WILL BE GAINED

Editor: Russells Point, Ohio.

I am in receipt of a letter from Mr. James W. Woolrey, American Legion Director of Marksmanship, stating that my letter dated March 25, addressed to him, regarding .22 caliber rim-fire ammunition for use by the American Legion in their pre-induction basic military drill training program, has been forwarded to you for your attention.

Will you kindly advise me what setup the Government has arranged in regard to the issuance of ammunition released by WPB for the above activity?

It is needless for me to outline the many advantages that will be gained by high school students in completing their basic military drill and rifle marksmanship prior to induction into the armed forces.

L. D. Arthur.

Commander Arthur is right on all counts. Any N. R. A. club may purchase .22 ammunition (.22 rifles, too) for pre-induction training. Information regarding the Association's basic small arms instruction program, including the procedure for purchasing rifles and ammunition for such training, will be mailed on request.—ED.

OHIO MATCHES

George Washburn, 28-year-old aircraft designer of Troy, won the eighteenth annual Ohio gallery rifle championship yesterday, defeating more than 200 contestants who fired in seven regional tournaments.

The new champion, who bettered his own national record in the three-position any-sights match with 296 x 300, piled up an aggregate score of 1063 out of a possible 1100 to take the crown. He also won the off-hand match with 191 x 200. His previous mark in the any-sights event was 294.

Mrs. Anna Lou Ballew Barker of Chillicothe, whose husband is in the Navy, won the women's championship with 284 x 300, one point above the score of Mrs. Dorothea Kelly of Akron. Mrs. Kelly is the only woman ever to hold the state title fired in competition with male shooters, she turning the trick twice, while Mrs. Barker is the only woman ever to win the national junior title in competition with male marksmen.

N. R. A. BASIC TRAINING PROGRAM

548 Schools Approved

5414 Attendance Certificates

equals

2 Regiments plus 5 Companies

Report Your Graduates Promptly

WASHINGTON SCHOOL

Early in 1943 the Association's Headquarters Staff made plans for a Small Arms Firing School for the citizens of the District of Columbia and surrounding communities. Since range facilities within the District of Columbia were extremely limited arrangements were made to use four high school and two college ranges in addition to the N. R. A. Headquarters range. The size of the ranges varied from five to ten firing points. Classes were conducted from Monday through Friday for a two-hour weekly session.

The cooperation of the Washington Evening Star, largest daily newspaper within the District, was secured and they generously contributed a program of publicity which began on January 17th. Daily stories were run in the paper and a registration coupon was included. In addition a registration booth was established at the Evening Star building for the convenience of those in the down town area. After two weeks advance publicity approximately 900 registrants had signed up for the seven-weeks course of instruction.

To make the best possible use of the facilities available, arrangements were made for a class room at each of the schools. The schedule of instruction as given in the Basic Small Arms Instruction Manual was slightly revised so that two groups could be handled at the same time at each school. Under this system each class was divided into two sections, the one reporting a week later than the other. Each section contained two men for each firing point available on that particular range. Sections rotated from the classroom, where lectures and demonstrations were given, to the range, for practical application and firing. By using this system it was possible to schedule 396 students in the first series of classes.

Since it was impossible to handle all who registered during the first two weeks, priority, on the basis of low draft classification and military age, was established. Those chosen for the first class were scheduled to the locations nearest their home addresses in accordance with the evening on which they indicated they would be available. Winter Sighting Devices were built for each range and all other necessary material supplied.

Obviously a large instruction staff was necessary. The resources of local clubs in this respect were pooled and a staff of approximately thirty-five men selected for Instructors. One classroom Instructor gave all lectures and demonstrations for both sections of each class. Range Instructors were assigned to each range for each class on the basis of one Instructor to each three firing points.

The first series of classes has recently been completed with approximately 85% of the students finishing the course of instruction. The last class period was devoted to qualification firing during which 70% of the students qualified. Of this number it is rather remarkable to note that 55% qualified as Basic Rifleman First Class, 25% as Basic Rifleman Second Class and 20% for the Third Class Certificate. This was an exceptionally high average of qualifications for the higher grade and is a splendid tribute to the capabilities of the instruction staff.

A second series of classes is now in operation and includes a group of 135 Army Officers attached to the Quartermaster General's office who desire this course of instruction.

In any Metropolitan area it seems obvious that such a pooling of resources of N. R. A. affiliated clubs can produce a better general result than an attempt by each of those clubs to conduct a separate Small Arms Firing School. This Training Program is a splendid opportunity for established clubs to get together with a combined school of similar type so that they may secure more widespread publicity and be able to register a greater number of the citizens in that community.—C. R. R.

BERMUDA MATCH

Bermuda, Dec.—A six-man rifle team of United States Marines won the Inter-Unit Title Competition in a match sponsored by the Bermuda Volunteer Rifle Corps at the Warwick Rifle Range recently.

The Marines, all expert riflemen, outshot seven other teams, with the U. S. Army placing second. The winning team was awarded the Bermuda Volunteer Rifle Corps Commanding Officer's Cup, presented by Lt. Col. R. C. Earl, Order British Empire Volunteer Decoration.

Members of the Marine rifle team were Platoon Sgt. Arnold F. Frazer, East Brady, Pa.; Sgt. Michael W. Scollin, Saranac Lake, N. Y.; Sgt. John L. Keefer, Pittsburgh, Pa.; Sgt. James W. White, Hammond, La.; Corp. William A. Nabors, Jr., Birmingham, Ala.; and Corp. Edward Plasky, Newark, N. J.

Second Lt. Glenn O. Seider, Baltimore, Md., coached the Marine team.

NEW BOOKS:

"GUN CARE AND REPAIR"

By CHARLES EDWARD CHAPEL

Here we have a manual of gunsmithing by an author already known to many of us through his books on Gun Collecting and other subjects. "Gun Care And Repair" is the first for Lieutenant Chapel in this field. Again, it is the first book on gunsmithing which contains data on our military small arms, 89 of its 454 pages being devoted to their description and nomenclature. These pages, including illustrations drawn from official photographs or sketches, are basically reproductions of technical and field manuals covering the Springfield and M1 Garand rifles, the Thompson sub-machine gun, automatic pistol and revolver. This material furnishes a handy reference for identification of parts, assembly and disassembly.

There are more than 30 additional chapters covering gunsmithing from the beginning of planning-the-shop to metallurgy, drilling, rifling and chambering barrels. This is *the* book for anyone who is considering gunsmithing as a possible hobby or trade, and needs to know what is involved rather than how to do it in detail. The whole subject is covered rather briefly, giving the beginner only a broad idea of what he is going into, each chapter beginning with a simple dictionary description of the immediate subject to be discussed.

The hundreds of sketches making up the 45 full-page plates are necessary to supplement the unduly abbreviated suggestions for making and using the many and various gunsmithing tools. Much additional research will certainly be needed as a complement to this book, especially for those who decide to make gunsmithing something more than a hobby.

Some of the sketches, working methods and many of the formulae listed are strikingly similar to those found in some of our older gunsmithing books, some of which are no longer available. There is really nothing new on gunsmithing in this book except some indications of new methods based on recent developments in the airplane industry.

Lieutenant Chapel did not neglect the antique firearms as one chapter briefly covers that subject and there is one excellent chapter on general safety precautions. The book has an alphabetical index.—A. H. B.

Available through N. R. A. Book Department, $3.75 postpaid.

REVIVAL OF SQUAT

Not only is war terrible; it is complicated. U. S. military leaders have found that in this war certain conditions (such as mud, water, snow or gas) make it advisable to add a fifth rifle shooting position to the already standard four. To find the suggested fifth position, desirable as it must have been, the Army proceeded to scratch back in the musty records.

There were several requirements for the new position which could not be met with any of the old ones. As an example: a soldier is crossing a shallow stream and spots a Nasty on the other side. What to do? Why, shoot the b - - - - - -, of course, ya dope! "Ah," says the soldier, "but in what position, may I ask? I can't shoot him prone cause I'll get my belly wet. I can't shoot him sitting for a slightly different reason. I can't shoot him kneeling cause I'll get water on the knee. And who the hell can hit anything standing."

Now, that is a problem isn't it, and one that applies to mud and snow as well. And, boy what a layer of mustard gas on the ground would do to a guy.

That's the reason the Army dug out the Navy's old squatting position, which is fine if the tide stays out.

GUNS NOT WANTED

Some confusion has been caused lately in the ranks of patriotic riflemen by the various attempts which have been made, officially or unofficially, to collect guns, knives and empty brass cases for the Army and Navy. In order to answer the many inquiries received, your Association has made a thorough check on the entire situation and finds this to be the official position at this time:

Guns for the Navy: None desired.

Rifles for the Army: No more desired.

Shotguns for the Army: No singles or doubles desired. No more pumps or semi-automatics required. The Ordnance Department did make a request for shotguns, but the required number had been obtained by March 15. Such additional pumps and semi-automatics as are submitted in usable condition will probably be bought by the Ordnance Department but they express the hope that no more will be submitted.

Knives for the Army: None desired.

Salvaged brass: Not desired by the Army. Salvaged brass is, of course, desired for the industries producing munitions. Such brass should, however, be sold to local junk dealers for processing.

Contributions: Both the Army and the Treasury have stated that they much prefer to have people put this money into war bonds where it can be used as needed and where it will serve as a cushion to help take up the shock of post-war adjustments.

As this issue goes to press an abortive and unauthorized campaign has been started in some cities within the Ninth U. S. Naval District, requesting sportsmen to turn in to the Navy firearms of all types in reasonably good condition.

Regardless of what you may see or hear, the Navy does not want these guns. Please do whatever you can to correct any misinformation which may exist in your community with regard to this subject.

IMPORTANT POSTAL ORDER

1. No parcel exceeding 5 pounds in weight, or 15 inches in length, or 36 inches in length and girth combined, shall be accepted for dispatch to A. P. O.'s overseas for individuals.

2. Except as hereinafter provided, no parcels shall be accepted for dispatch to A. P. O.'s outside the continental United States unless they contain such articles only as are being sent at the specific written request of the addressee, approved by the battalion or similar unit commander of the addressee.

Sealed parcels not exceeding 8 ounces in weight on which postage at the first-class rate is prepaid may be accepted for dispatch to Army personnel at A. P. O.'s overseas without the presentation of an approved request from the addressee. This modification of Order No. 19687 has been agreed upon by the War Department in order to facilitate the sending of small essential articles such as eyeglasses, watches, fountain pens, insignia, etc.

Referring to restriction 2 above, the War Department states that individuals serving overseas desiring to request the mailing of parcels to them will be required to include in their request the following:

1. A general description or name of article requested.

2. The grade or rating, the complete address, and the signature of the individual (addressee) making request.

The request will be presented to the battalion or similar unit commander who will approve it when the circumstances justify. Requests of officers not assigned to organizations or separate units will be approved by the next higher or theater headquarters. In case the individual making the request is a civilian, the request will be approved by the commanding officer of the installation concerned.

Parcels addressed to individuals at A. P. O.'s overseas must be accompanied by the approved written request from the addressee as above set forth when presented for mailing. The request shall be postmarked by the accepting employee in such manner as to prevent its reuse and then be returned to the sender.

No matter addressed to members of the armed forces or other persons receiving mail through A. P. O.'s overseas shall be accepted as insured or c.o.d. mail.

Similarly, letters or packages containing money or other articles of value except valuable papers addressed to members of the armed forces at such overseas A. P. O.'s, or

to other persons receiving mail through such A. P. O.'s, shall be refused registration. However, letters containing valuable or important papers may be registered. No postal indemnity will be paid in connection with registered letters containing the valuable or important papers. The public should be warned that it is not advisable to inclose currency in ordinary letters and the use of money-order service for remittances is recommended.

The restrictions of this order apply only to personnel of the United States Army and to contractors and civilians served through A. P. O.'s outside the continental United States. They do not apply to mail for personnel of the Navy, Marine Corps, or Coast Guard, except Article 1 above restricting weight and over-all size of parcels which applies to all parcels for foreign mailing.

Augustus Peter Lambert

Augustus Peter Lambert, widely known in police and small arms circles in New England, passed away recently following an illness of several months.

His boyhood training was acquired the hard way on a Montana ranch where he early developed a working familiarity with firearms. He became an intelligence officer in World War I.

An active protagonist in training civilians as well as law enforcement officers, he preached preparedness to whomever would listen and, more practically, gave lavishly of his time to further that end.

He was a life member of the N. R. A., several times President of the Massachusetts Rifle Association and long-time master of Walnut Hill Range of the International Police Chiefs' Association, New England Police Revolver League and other law enforcement organizations.

He leaves a widow, who, like himself, is an honorary member of the Massachusetts Rifle Association, also a married daughter.

Brig. General Jacob Meyer Coward, U.S.A. (Ret.)

At Trenton, N. J., on April 3rd, after a short illness.

General Coward was a director of the National Rifle Association during his term as Executive Officer, National Board for Promotion of Rifle Practice and Director of Civilian Marksmanship, June 1928 to August 1932.

A life member of the Association and familiar figure at National Rifle Matches, General Coward's passing is deeply felt by a host of riflemen friends. He was in his 75th year.

COMING EVENTS

May 16: Spring Pistol Tournament, Flint Michigan. *A. J. Marxhausen, 2521 Thomas St., Flint.*

May 23: Spring Small Bore Tournament. Flint, Michigan. *A. J. Marxhausen, 2521 Thomas St., Flint.*

June 6: Magic Empire Tournament, Tulsa. Oklahoma. *Dixie Clark, 114 So. Detroit, Tulsa.*

June 13: Annual Deerfield Valley Small Bore, Shelburne Falls, Mass, *Emory C. Broadhurst, 95 Mechanic St., Shelburne Falls.*

Selected Reading

★ ★

THE BEST OF THE CURRENT BOOKS ON TRAINING, SHOOTING, HUNTING GUNSMITHING AND SOLDIERING

Basic Small Arms Instruction	$ .25
The ABC of Practical Pistol Instruction	.25
The ABC of Practical Riot Gun Instruction	.25
Practical Organization of Industrial Plant Defense	.25
ABC of Pistol Shooting (advanced pistol)	.25
From Tyro to Master (advanced small-bore and gallery)	.25
A Comprehensive Small Arms Manual—Haven	1.50
Advanced Gunsmithing—Vickery	4.00
Automatic Arms—Johnson—Haven	5.00
Big Game Hunting and Marksmanship—Lee	2.00
Bombs & Bombing—Ley	1.25
Company Duties	.25
Complete Guide to Handloading—Sharpe	7.50
Complete Tactics Infantry Rifle Battalion	.75
Elementary Gunsmithing—Frazier	2.00
Encyclopedia of American Hand Arms—Chinn-Hardin	8.00
Essentials of Infantry Training	1.00
Fast and Fancy Revolver Shooting—McGivern	3.00
Guerilla Warfare—Levy	.25
Gun Care and Repair—Chapel	3.75
How the Jap Army Fights	.25
Infantry in Battle	3.00
Map & Aerial Photo Reading	1.00
New Infantry Drill Regulations	.50
New Soldiers' Handbook	.25
New Ways of War—Wintringham	.25
Shells and Shooting—Ley	2.00
Skilled Defense—Mitchell	4.00
State Defense Force Manual	1.00
Textbook of Firearms Investigation, Identification & Evidence—Hatcher	7.50
The Bullet's Flight—Mann	6.00
The Ducks, Geese and Swans of North America	4.50
The Hunting Rifle—Whelen	4.75
The Officer's Guide	2.50
U. S. Military Small Arms, 1776-1940—Hicks	4.50
U. S. Martial Pistols & Revolvers—Gluckman	5.00
Cat. U. S. Martial Short Arms—Gluckman	1.95

All books are sent postpaid and with return privilege to members

NATIONAL RIFLE ASSOCIATION

SCOTT CIRCLE **WASHINGTON, D. C.**

DOPE BAG ☆ ☆ ☆ Conducted by F. C. NESS

THIS MONTH:

Ordnance and Industry · Handgun Loads · .357 Magnum · .38 Special · .44 Special · .45 Colt · .38-40 Colt · .25-20 Bisley · .22 Shot Revolver · High-Velocity Lead Bullet · Dry-Ice Rifle · .400 Newton · Scope Chart Dope · Letters · Trade Dope.

Late Developments. Many months ago a Buick double-spread in the S.E.P. announced the successful manufacture of steel cartridge cases for such guns as the 75-mm. and 3-inch anti-tank. This was a major achievement by our Ordnance and industry. Later other sizes of cases were added. Long before that, however, I had obtained steel samples for small arms, from various sources, for test-firing. We have tested steel cases for the .30-'06 cartridge, 12-gauge shotgun shells, and even the .22 Long Rifle rim fire. Some of them have been used in Dope Bag tests for the past year. They all have given normal results in firing and in reloading. We have necked some of the .30-'06 cases down to fit the .228 Ackley Magnum and the .22 Varminter, but got more cracks and seams and a higher mortality than with brass. The steel cases are as easily reshaped, however.

The steel cases we have tried in our rifles, shotguns and reloading tools, have been clad or coated against binding. So well is the surface metal bonded to its base that there is actually less corrosion or staining than on brass cases. No changes appear on the surfaces of those cases purposely left on the ground and exposed to the elements for several weeks. We have found the steel itself is rust-resistant by sectioning fired cases and exposing them to a 97% brine solution. An obvious advantage of using steel is that it does not become hard and brittle when worked and requires no annealing following each stamping, punching or drawing operation in forming bullets or cases. A peculiarity of the rim fire cases which we noticed was lighter indents after firing. Because ignition was normal, even under weak mechanical ignition, we concluded the steel tended to spring back and close or modify the imprint of the striker after the indent had been formed.

Now comes a clipping of a news story on steel bullet-jackets, from Michael V. Sotak, which was published in the Pittsburgh Post-Gazette of February 23. The story tells how cladding, facing steel with gilding metal, by the Superior Steel Corporation saves thousands of tons of copper annually. In the proportions of 20% the gilding metal is bonded to the steel plate and then the latter is punched out to form the discs which are successively drawn into .30-caliber and .50-caliber bullet jackets. Originally, cladding was designed to produce a composite steel having a stainless surface over an ordinary carbon core. Great Britain, Canada, Russia and China had been using the composite metal when our own Ordnance adopted this clad jacket metal of which millions of bullets are now being made. At least 18 companies are now using the Superior process for making the gilding clad steel strip for the fabrication of bullet jackets.

Steel also is being saved by replacing metal gages with glass gages in industry. They are molded or die cast at one-half the cost of producing steel gages. They have other advantages, once made, because glass has a lower thermal conductivity than any metal, and it does not corrode from finger prints and perspiration thus saving the time and expense of greasing and degreasing with inhibitors. Also glass resists abrasion under normal employment better than steel and by its use a longer accuracy life is assured.

Another way of saving steel is through redesign. Of particular interest to our readers is the achievement of the Rochester Ordnance District in reducing the cost of the Springfield by 25% through reduction of manufacturing time and the saving of 20% of the steel formerly used in making the M-1903 rifle. This has been accomplished by redesign of forged parts into stampings. Some of the parts so affected are the trigger guard, floorplate, magazine well and follower, buttplate, butt swivel, lower band and stacking part. In this cheaper version the Springfield rifle is known as the M-1903-A3.

Up in Ontario, W. B. Elliott, called my attention to the Canadian publicity on the two-groove rifling used in producing their Enfield Service barrels. They claimed improved accuracy which is credible and it is also logical to believe the fewer grooves reduce friction and result in a higher muzzle velocity with the Service load. The big purpose of the two-groove rifling, however, is to cut down grooving time in the interest of production. Our own Ordnance people and barrel manufacturers have not been behind the Canadians in adopting two-groove .30-caliber barrels, but only in announcing the fact unequivocally. For some time now United States Steel has used full-page advertisements in such periodicals as *Time* to tell American readers that American barrel manufacturers have cut in half the time required for production. Changing from four grooves to two grooves accomplishes that.

* * *

Boser's Loads. In reviewing letters from Gordon C. Boser I find some interesting material on handgun loads which I could not incorporate in my April article on his .401 Special.

Gordon C. Boser

In the .357 Magnum he used bullet No. 357446 which weighed 153 grains of 1-10 temper, or 143 grains when made with a .110-inch cavity 3/8-inch deep in its nose. He seated these bullets .400-inch deep in W.R.A. cases and used 15.4 grains No. 2400 in the .357 Magnum. At 25 feet it shot through a 3/16-inch steel plate and 2½ inches deep into the seasoned maple backstop. The recovered lead weighed 90 grains. The 143-grain hollow-point with 16.0 grains No. 2400 blew a half-inch hole through the plate. Only fragments spattered the maple backstop, but deeply. The W.R.A. factory load in the same test also went through the plate, but only ½-inch deep into the maple behind it. The recovered bullet weighed 40 grains. Another factory load failed to penetrate, but bulged and cracked the plate.

Boser observed that the .357 Magnum bullets keep spinning as they expand in wood and tear the surrounding fibers, while the .44 Special and .45 Colt bullets wedge or force apart these fibers without breaking them. The .357 bullets, of course, not only had a higher initial velocity, but a faster rate of spin.

On woodchucks he found the .357 Magnum to be inferior to the bigger bores, but superior to the .38 Special and smaller handgun calibers. With the latter he had two neck-hit kills out of 10 shots. The other 8 shots included 3 misses, 2 visible hits which escaped and 3 paunch-hit chucks which were later recovered. With the .32-20 revolver he had better results, or three chucks out of 6 shots. The other 3 shots were misses and 2 of the kills were on paunch hits. With the .357 Magnum he got seven chucks out of 19 shots, all within 50 yards. With the factory load he had 5 misses and 3 neck-hit kills and 2 paunch hits which did not kill. With his handloads he had 3 misses and 4 clean kills of which 3 were paunch hits. He had 2 paunch or rear-end hits which did not kill.

With the same bullet, No. 357446, in the .357 Magnum Boser found No. 4759 powder was accurate and clean burning when loaded to the base of the bullet, which required 11.0 grains weight. Pressure signs were milder than with his loads of No. 2400 powder, but still the 4759 load penetrated 5 inches in hard pine, using the 1-10 bullet .001 inch larger than groove diameter. He shot an off-hand group of 5 tens at 25 yards, with this load, which measured 1⅞ inches. Finally, he designed and tried his Ideal bullet No. 357453 with 12.5 grains of No. 4759 in the .357 Magnum, getting good accuracy. The seating depth was .340 inch. It weighs 155 grains in 1-15 temper, or 145 grains with a straight nose-cavity of ⅛ x 5/16 inch. It is .693-inch long, seating .340-inch deep for .38 Special Colt revolvers and .410-inch deep when loaded for S. & W. revolvers.

Boser used 15.5 grains of No. 2400 with this bullet in the .357 Magnum with W.R.A. components and got 1¼ inches greater penetration in pine than with bullet No. 357446. Both gave about the same accuracy at 50 yards, but the new bullet seemed more accurate at longer ranges. In the .38 Special he used this new bullet, No. 357453, with 2.5 to 3.2 grains Bullseye and 3.8 to 5.0 grains No. 5. The best load in the Colt was 3.6 grains No. 6 powder, while in the S. & W.

revolver, 3.9 grains was best. With the hollow-point version of this bullet 5.3 to 5.6 grains of Unique or 8.0 grains of No. 80 were used. All the above were reported accurate in the .38 Special. In the .357 Magnum 3.5 grains No. 6 gave the best accuracy.

Boser shot an arm-rest group at 50 feet which measured ¾ inch (horizontal) and 1 3/16 inch (vertical). We could get no accuracy with these bullets and 3.6 grains No. 6 in our own S. & W. and Colt revolvers. From machine rest their groups ran from 50% to 400% bigger at 50 yards as compared with other bullets and our handloads. Boser reported fine accuracy with 9.0 grains No. 4759 behind this bullet in the .38 Special using R.A. cases, and good accuracy with bullet No. 357466 and 8.5 grains of No. 4759. We did not try these latter two loads.

Boser tried and liked the Potter Electric Furnace with which he had molded 7,000 .38-caliber bullets at the time he wrote about it. His general practice was to size his bullets .001-inch larger than groove diameter in all calibers. He reported his handgun groove diameters as follows: .38 Special, .356 inch; .44 Special, .427 inch; .45 Colt, .4525 inch; .32-20, .311 inch; and .30 Luger, .3105 inch. The very best score he reported was 142 x 150 at 50 yards, fired offhand with a handload in the .38 Special. It was the Western 148-grain factory wadcutter seated flush in Western cases and loaded with 2.3 grains Bullseye and W.R.A. No. 108 primers.

In the .38-40 Colt, Boser used his Ideal bullet No. 401452 seated .410-inch deep in R.A. cases. The most accurate load was 7.6 grains No. 5. Next best was 5.2 grains Bullseye. Equally accurate was 9.0 grains Unique, which was the most powerful load tried in this case. He said 6.3 grains of No. 6 was also a very good load. In the .45 Colt he used Ideal bullet No. 454190 (255-grains) with 8.5 grains No. 5 powder.

In the .44 Special he used his Ideal bullet No. 429454 seated .350-inch deep and .002-inch larger than groove diameter. Several loads gave approximately the same scores at 25 yards, but they are listed in order, beginning with the highest: 6.2 grains No. 6, 11.0 grains No. 80, 8.2 grains Unique, 5.2 grains Bullseye, 7.0 grains No. 5, and 16.0 grains No. 4759. The heaviest loads tried were 8.5 grains Unique or 20.0 grains No. 2400 behind the 225-grain hollow-point bullet, but these two equalled the others in scoring. They were all fired offhand at 25 yards and scored from 46 x 50 to 50 x 50. Another good load was the Bond bullet, No. 429750, seated to its crimping groove, and 14.5 grains of No. 4759 powder. Boser said it was extremely accurate.

* * *

.45 Colt Load. Wm. G. Jacquemin, New York conservationist, says he has consistently used Bond bullet No. 454760 in all his .45 revolvers ever since I announced it in THE AMERICAN RIFLEMAN back in 1926. I designed this hollow-base wadcutter many years ago, for general use in the field and on the range, when the .45 Colt S.A. was my pet sidearm. Jacquemin used 7.0 grains of No. 5 for fun shooting and 13.7 grains of No. 80 for field work. This was his best cat-killing load until No. 80 was supplanted by No. 4759. He started with 15 grains of 4759 and worked up to 21.5 grains weight behind this bullet before he could detect any signs of pressure. At 19 grains he began to get good accuracy, and he finally adopted 21.3 grains as his regular field load.

.45 Colt Groups. Emmett G. Hopkins of Cedar Rapids, Iowa, sent in a series of targets fired offhand at 10 yards and 35 feet with handloads in .45-caliber handguns. He did not do so well with the pistol, getting a 7-inch 6-shot group centered a couple of inches above the center of the target. He used the Ideal .45 A.C.P. bullet and 4.5 grains No. 5. In the New Service Target revolver with 7½-inch barrel he used 8.0 grains with this bullet and got a 2⅜-inch group a half-inch low. Repeating with the Bond .45 A.C.P. 230-grain bullet and 7.9 grains powder he again got 2⅜ inches spread, this time on the point of aim. With the M-1909 D.A. revolver (5½-inch barrel) he got 12 shots on aim in a 4⅞-inch group, with the 196-grain Bond .455 British bullet and 7.4 grains No. 5.

He used F.A. .45 Colt cases and small-size R.A. N.C. primers throughout. The remaining targets were all fired at 30 feet with the N.S. Colt revolver, 6 shots per group. A 268-grain Bond bullet was used with 7.5 grains No. 5 and made a 3⅛-inch group 1¼ inches low. The 196-grain Bond .455 British bullet made 2¾-inch and 3⅛-inch groups, one of them on aim, using 7.9 grains of No. 5. A charge of 7.2 grains made the best group with this bullet, 2 inches spread, also on aim. The Ideal 193-grain .455 British bullet made a 3-inch group ¾-inch low with 7.4 grains, and a 3⅜ inch group 1¾ inches low with 8.3 grains of the same powder.

* * *

.38 Special Stunt. Emil Swatos overcame leading without resorting to smearing messy grease on his bullet noses. The Hensley bullet, No. 65, has a wide upper band projecting beyond the case and is prone to cause throat-leading of the revolver. Swatos rolls this exposed lead in dry, powdered graphite (Dixon's Microfyne) and he fired 300 rounds in one day without leading. It is unaffected by heat, and does not melt as does grease.

* * *

Cast Bullets. Helmer Romness of Zumbrota, Minnesota (Route 1), rents bullet molds at a buck a throw. His popular .45-70 mold, No. 457124, has crossed the continent and remains in good condition. His own favorite is No. 257312 which casts a 75-grain lead-alloy bullet for his .250 Savage. A 64-grain gas-check was tried with 25 grains of No. 2400 (above 3200 f.-s. m.v.) and repeatedly fired without leading the bore. Ordinary bullet lubricants were used.

* * *

"Pop" Eimer, the Missouri (Joplin) gunsmith, has many border-line anecdotes which should be retold. However, I'll stick to gunsmithing. One of the Border Patrol boys had his 7-mm. Mexican Mauser converted to .30-40 Krag caliber by "Pop" who blandly dressed off the rims and cut an extraction groove in the case heads, a la 7-mm. rimless. It worked well enough to cause the death of three smugglers in a group and four of their contraband-laden burros as well. Hard to keep supplied with such cases, however, as they are often lost in the excitement of battle.

Ivan Welch of Little York, Ill., wrote me that "Pop" Eimer had converted his .32-20 Bisley Colt to take the .25-20 Repeater cartridge, saying it was extremely accurate at 50 yards with the 60-grain high-velocity factory loads and with a variety of handloads. "Pop" lined the Bisley bore with a .257 barrel and fitted a smaller firing pin and a new recoil plate of tool steel. The chambers were lined also and made longer, a la Kilbourn, for pressure relief. The fired cases come out looking much like the .255 Dean, which some handgunners eye longingly. Well pleased, Welch recommends "Pop's" workmanship and conversion jobs to all comers.

* * *

Shot Revolver. Kenneth A. Wright, gunsmith of Bloomsburg, Pa., who specializes in converting revolvers and pistols to smoothbores for shot, did such a job on my H. & R. Sportsman revolver. It is adapted for the high-velocity type of .22 shot cartridge popularly used on Mossberg Targo and Routledge Mo-Skeet-O targets thrown from traps. These loads in proper shoulder arms are very effective at 45 feet on such targets, and they will also break regulation Skeet targets from the short-range No. 8 position.

In the revolver or pistol, properly smoothbored by Wright, they are effective at shorter ranges. He sent along a target pattern of 8 inches spread, range unknown. I found that this .22 Sportsman would put its charge of 120 No. 12 shot into a foot circle at 45 feet, which surprised me. That is almost as good as the shoulder arm which does up to 10 inches spread. I tried a few shots at miscellaneous self-thrown targets. It did well, I thought, as all of them were well hit.

* * *

That Denver Air Rifle, on which I have received some clippings and more questions, has shown up at last and was fired right here in my office. Regular solid .22 bullets were used and they flattened into discs against the metal backstop. The m.v. was well over 700 f.-s. Other air rifles I have tried have been under that, down to 500 f.-s. m.v. This one is a heavy bolt-action repeater with full-length tubular magazine along the barrel for the .22-caliber lead bullets. The gas chamber (carbon dioxide) is under the barrel. It was filled with dry ice four months earlier and is still shooting with force and precision. R. J. Monner, the Denver designer, told me it would be produced after the war and perhaps in semi-automatic type as well. I was glad to meet him and to try his gun. I was impressed by the economy of firing and by the following features: no pumping, no finger loading, no powder, no primer, no case and no barrel heat. Actually, the more it is fired in a given session the cooler it gets, even down to the frost degree if the air is damp. Maybe it could double as a refrigeration pump when equipped for automatic loading and firing?

* * *

.400 Newton. In commenting on the .400 Niedner, David A. Swaney says that the Buffalo Newton Co. made four such rifles by using the .405 Winchester barrel set in a collar in the Newton receiver. They were long-throated to permit a seating depth of only ⅛ inch with the 300-grain (.405W) bullet. The load was 69 grains of No. 10 powder, and a 300-grain spitzer bullet was given 3042 f.-s. m.v. So says Swaney.

Bullet Dope. This is written as a contribution to the current discussion on bullet design in your department, the Dope Bag.

In the March issue, Mr. Harry O. Dean makes on the subject of "balance" the remark that "the center of gravity must be coincident with the center of form for gyroscopic stability during flight." Very likely Mr. Dean did not write quite what he intended; for the statement as it stands (in either of its two possible meanings) is incorrect.

In a bullet of homogeneous material the center of gravity necessarily coincides with the center of form. Hollows or plugs of different densities in the ends of the bullet will move the center of gravity forward or back. Mr. Dean refers to one famous .280 Ross target bullet in which the hollow "windshield" or ballistic cap was so long that the center of pressure was moved too far forward for its other characteristics, causing the bullet to be under certain conditions insufficiently stable and therefore inaccurate. But there are almost countless bullets with various hollows in one end or both, and therefore different positions of the center of gravity; and such bullets are stable so long as the longitudinal position of the center of gravity is not too unsuited to the other characteristics of the bullet.

If, on the other hand, the statement be taken to refer to the lateral position of the center of gravity, it is still incorrect. Displacement of the center of gravity from the axis about which the bullet rotates while traveling down the bore, causes that dispersion on the target which Dr. Mann isolated and named the "x-error." This, however, has no connection with stability, and does not prevent making bullets as stable as desired.

Since the subject of stability is not a very simple one, it is probable that the best way to avoid misconceptions or misunderstandings is to deal with it in a mathematical manner. For this purpose the conditions for stability are set forth in the chapter on exterior ballistics in Hayes's "Elements of Ordnance."

Under the next item, "Current Bullet Ideas," the following is mentioned in connection with another Dope Bag correspondent: "The peculiar curve of the break or step where the tail and cylinder meet is very important," he says, "for reducing the lag or delay." I realize, of course, that limitations of space make it impossible to detail more than a fraction of the actual experiments performed by different individuals on the various items mentioned. I would, however, appreciate any information which may be available on the experiments which led to the above conclusion. [See base cut.]

In that connection, conclusions as to the time of flight are sometimes drawn from measurements of the drop of the bullet during flight, from the equation for free fall $h=\frac{1}{2}gt^2$. This relation, while true of the trajectory in vacuum, is not true in air and hence will not give accurately the actual time of flight. (The reason for this can be gone into if desired.) For a very curved trajectory the time of flight computed from the above relation is not more than two-thirds the actual time. At the other extreme formed by a very flat short-range trajectory, the time computed is not far from correct, given correct data. In that case however the computed time loses some of its reliability from the fact that it is inferred from the drop; when the latter is small, a moderate error in its measured value causes an error in the computed result which is rather large in proportion to the total value of said result.

We see that the computation of time of flight in the manner referred to is good for only comparative and roughly quantitative results. For accurate results it is necessary either actually to measure the time of flight, or to compute it with the aid of a ballistic coefficient itself obtained by accurate ballistic measurements. It also must not be forgotten that differences in muzzle velocity, when not allowed for, mask the effects of other variables; therefore the muzzle velocity of each shot should be known.

Velocity, time of flight and stability can all be measured.

The illustrations of six bullet shapes in the same issue of the Dope Bag present some interesting points. The tubular one (Number 5) was tried about 50 years ago in Switzerland by Colonel Hebler, the inventor of the modern metal-jacketed bullet. It does not attain its object of materially lessening air resistance. The .22 bullet with adapter on its base for firing through a caliber .30 bore (Number 6) suggested by Mr. Fred S. Ellers also has a history. The adapter is commonly called a sabot, and the scheme has been considered by different nations at various times for use in light cannon. It has been rejected largely because of the danger which the detached sabot could cause to friendly troops in certain situations. It might very well be made to work in rifles, but there might be still some amount of danger to other persons. What would make one think so is the Dope Bag item in the same issue on the hardwood bullets used by the Japs under certain close-range conditions, and also past experiences with wads in blank ammunition.

I hope these remarks add something of interest to the present discussion.—E. H. HARRISON.

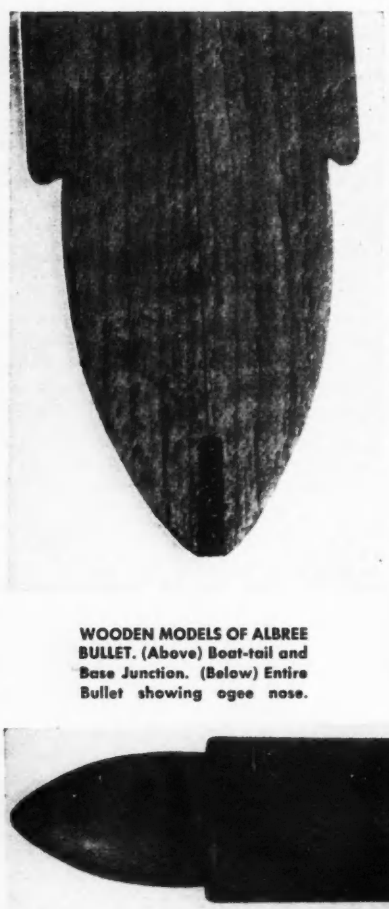
* * *

Projectiles in Flight. To attempt to predict the behavior of a bullet during the period of its flight is a rather hard task. Once free of the bore, the missile is under the influence of the powerful counter-forces which tend to retard its rotation, destroy its balance, and otherwise interfere with its accurate flight to the target. At no time do we have an absolute guarantee of its accuracy. There is always that wild unaccountable shot, that lone "flyer" that may sneak in at any time to ruin an otherwise perfect group or a high score on the target range. The most we can hope to do is to attempt to design projectiles that can resist, in so far as possible, the forces which may cause it to deviate from its intended path. The use of rifling to rotate the bullet is perhaps the greatest single contribution to the accuracy of small arms projectiles. Rotation in flight imparts to the bullet a property of balance which enables it to successfully resist the counter-forces that are attempting to destroy its equilibrium.

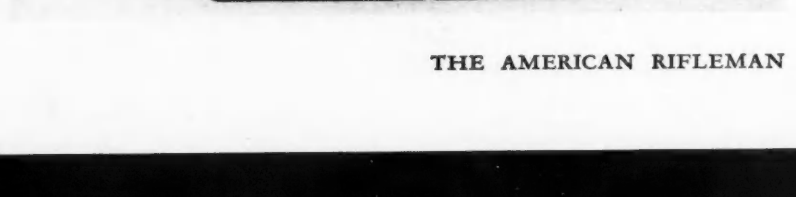
"Gyroscopic Stability." As the missile traverses the bore it is rotated by the lands of the rifling which bite into the jacket walls and force the bullet to follow the twist. After leaving the muzzle the missile has a high rotational speed which varies according to the rate of twist of the rifling. The number of inches in which the rifling makes a complete turn is referred to as the "pitch." The pitch of the rifling varies according to the caliber and according to the weight and length of the missile to be stabilized. Long, slim bullets usually require a faster pitch to retain their balance over a given distance.

The principle behind gyroscopic stability is a simple one; as any part of the bullet comes under the influence of gravity, that part is immediately turned uppermost. In this way the projectile itself resists the "go as you please" tendency and keeps its point foremost during flight. Without this "self balance" the missile would have no reasonable amount of accuracy.

"Trajectory." While gyroscopic stability does resist any tipping action of the bullet in flight, it does not counteract the force of gravity and the bullet is subject to a constant attraction to the earth. The flatness of the trajectory or flight path of the missile is dependent upon the "time of flight" or the lapse of time necessary for the projectile to cover a given distance. The faster the bullet, the flatter will be its line of flight. Since we wish the trajectory to be as flat as possible



WOODEN MODELS OF ALBREE BULLET. (Above) Boat-tail and Base Junction. (Below) Entire Bullet showing ogee nose.



we must select bullets that can retain as much of their initial velocity as possible. The bullet which has a high retained velocity will have a flatter trajectory at all ranges and will necessitate only a minimum of sight adjustment over extended ranges.

As the bullet is ejected from the muzzle it immediately comes under the influence of gravity, wind resistance and vacuum drag. It leaves the bore which has guided it thus far and encounters these elements with a shocking suddenness which momentarily throws it out of control. It wobbles and tips a bit until its gyroscopic stability steadies it down to normal flight. This tipping action of the bullet upon leaving the muzzle is often referred to as "yaw" and the degree of tipping is called the "angle of yaw." Once free, the projectile quickly regains its balance.

"Vacuum Drag," and Other Retarding Factors. Our bullet is now in free flight and it is travelling by its own inertia. It meets a strong resistance from the front since it must divide the air molecules and make a path for itself. The efficiency with which the bullet divides the air rests on the shape and length of the point; sharp pointed missiles naturally offer a lower resistance than do blunted ones. The air is displaced by the speeding missile with such violence that a strong sound wave is set up. The nearby passage of a bullet travelling at high velocity can be heard as a sharp crack as the sound wave strikes the eardrum.

The second force encountered by our bullet is called "skin friction." This force tends to decrease the bullet's rotational velocity by applying pressure on the outer walls of the jacket which is engraved with the marks of the rifling. There is not much that can be done about this condition and, since it is not of major importance, it can be overlooked. A similar condition occurs on the entire surface of the projectile due to its forward passage through the air. While this action may generate heat which is absorbed by the metal of the bullet, it is a natural condition affecting all objects moving through air.

A third retarding action and one of great importance is called "base drag" or, more correctly, "vacuum drag." It occurs in the following manner: When the air has been violently displaced by the point of the speeding bullet, it must return to its normal position. It does so with a violent turbulation but it is never able to keep pace with the streaking projectile. Just behind the bullet there is an area of powerful vacuum which exerts a strong retarding action on the base of the flying missile. This powerful action is one of the chief factors retarding and decelerating the velocity of the bullet. The attempt to counteract this force by streamlining the base of the bullet is apparent in many of the latest projectile designs. To date, the best known treatment for vacuum drag has been the boattail or "taper heel" design but several radical new designs may soon come to light.

These factors that I have mentioned constitute the most important problems in the design of projectiles and they give a clear indication of the time and thought involved in modern projectile design.—HARRY O. DEAN.

* * *

Regarding the scope chart on page 37, it will be noted that under the given condition (light, background, color and distance) the greater the magnifying power the better is the resolving power or performance. This is true under ideal conditions and often under fair conditions, but not always true under adverse conditions such as darkness, fog or rain, smoke or haze, which are all better met with a lower power. Darkness requires the larger exit pupils of the lower powers, and fog and haze and excessive mirage are less objectionably magnified by the lower powers. Haze is encountered in serious proportions only over the longer shooting distances, but mirage can modify resolution over the shorter ranges.

The objectives, whose diameters are shown in proportionate size, are important because the bigger the clear aperture of the objective lens (within practical limitations) the better the optical performance. The relative sizes of exit pupils are also shown for the average instrument of each different type. The bigger the exit pupil (up to 8-mm. diameter) the better the light transmission, and generally the practical performance is also improved, by facilitating sighting-eye alignment with this bigger "aperture" (exit pupil). The relative fields of view are shown, reduced to rods per 100 yards. In the 2-power group, or type (1), the 6-inch aiming post as shown covers 1/44th of the breadth of field. The bigger the field the quicker the aim, particularly on moving targets.

The relative limits of resolution are indicated for each type of instrument in the figures of the right-hand column. Assuming that, with this poorest * type of scope sight, the visual conditions are such as to barely reveal an 18-inch figure (about the size of the silhouette pistol target), the better types which follow it can resolve smaller objects and reveal more details as indicated. The group of well-known prismatic spotting scopes in the bottom row is included for comparison. Since these are not sighting scopes they have very little eye-relief (distance from eye to ocular lens). The target scopes, mounted slidably in target mounts, have some little eye-relief, or up to 2 inches. The hunting scopes, which are rigidly mounted, recoil with the rifle and must have a distance of at least 3 inches from eye to the nearest end of the instrument in order to save the sighting eye from injury.

* The 1-X Shotgun Scope is too poor to be included in this comparison.

* * *

Bullet Reclamation. A U. P. item in the New York Daily News says 100,000,000 rounds of ammunition are being fired monthly on our rifle ranges, and that experimental excavations of the target backstops, or earthen butts, have produced 70 pounds of reclaimable metal per cubic foot. It is planned to use the Fort Knox ranges as a guinea pig for a large-scale reclamation project. Bulldozers will be used to skim the ground behind the targets and hydraulic washing will uncover the bullet metal. If profitable quantities of copper, nickel, steel and lead are recovered the search will be extended to other military ranges throughout the country. The item was sent in by E. J. Keltner of the Bronx.

* * *

Superwax sample has been received for trial. Literature indicates it is good for leather, rope, canvas, cloth tops, wood, metal, bullets, skis, toboggans, flat irons, etc. We'll try it as a rust inhibitor on metal, as a lubricant on bullets and as finish on stocks and also as a preservative on leather. This will take time, but we'll report when we can.

* * *

Gun Re-Blue Co. is still in business at Tampa, Florida, which may be good news these days to many readers, particularly those in need of "fine custom bluing."

* * *

Litschert Improvement on his target-scope mounts, consists of a pin in the center of the mount clamp opposite the locking nut. It is threaded into the proper spot to engage the notch or hole which is cut in the left side of practically all dovetail bases. The Litschert mounts are split and permit sufficient springing to slide the new small projection over the scope bases until it slips into the hole in the scope block. The purpose is to help lock mount to base.

* * *

Roslyn Gun Shop, Thomas Woroniecki has just issued a new catalog, No. 2 dated "April 1, 1943." It has 72 pages. 850 illustrations, 2000 items of antique and modern weapons. He said it was a job requiring four months of hard work, but is willing to part with copies to all comers who enclose half-a-buck. Now he's working on a cartridge catalog and manual (ready about June 1st) to be sold at the same price.

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Wilson's List of used-gun offerings, with prices, has been received. There are more than fifty arms, domestic and foreign, and some optical equipment listed on the four mimeographed sheets.

* * *

Urban Defense Manual of 22 pages has been prepared by Captain C. H. Mann, Jr., of the Virginia Protective Force. His address is Suite 810, Bowen Bldg., Washington, D. C. The manual inspires and suggests rather than instructs, although it goes into considerable detail about the local problems usually encountered in urban fighting. Its purpose is apparently one of acquainting officers of state-guard forces with the nature of such problems and with the tactics these require under different anticipated conditions and for achieving various types of defensive and offensive objectives.

* * *

No More Barrels. J. R. Buhmiller announces his inability to take care of orders for rifle barrels. He cannot obtain steel and he cannot spare time for replying to requests which keep coming. He asks all to refrain from ordering or from requesting quotations or other information.

* * *

Police Clip has been designed for loading .38-caliber Service revolvers quickly, or all six chambers simultaneously. Six cartridges are held in clips in circular arrangement and inserted quickly and easily at one time. They are freed by a short straight jerk of the gadget. It must fit the cylinder. That for the O.M. Colt will not fit the Shooting Master. The price is nominal. Sold by Lee Sales Company of New York.

THE ARMS CHEST

The Arms Chest is an open market trading post where manufacturers, distributors, purveyors of professional services, and our own readers may cry their wares to fellow sportsmen at a modest cost. Returns are uniformly excellent—scores of advertisers have reported truly phenomenal results.

Advertisements are accepted from annual and life members of the National Rifle Association, *for personal transactions exclusively*, at 8¢ per word INCLUDING NAME AND ADDRESS, minimum charge $1.20. For all *commercial* advertisements the rate is 10¢ per word INCLUDING NAME AND ADDRESS, minimum charge $1.50.

Groups of figures are computed as one word. Spell out all descriptive words; abbreviations may lead to serious misunderstandings and thus impair the effectiveness of your ad. Non-specific phrases such as "highest prices paid," and "top prices paid" are objectionable and cannot be accepted; the terms "fair prices paid," or "state price wanted" are acceptable. A *specific* price must be stated on all *for sale* ads. Box number or blind ads will not be accepted. Please give your *complete* name and address, so as to insure the prompt delivery of all mail or telegraphic replies. All advertisements *must* be accompanied by cash. Final closing date is the 5th of the preceding month. *Please print all advertisements plainly*—we cannot be responsible for errors due to illegible writing.

In describing the *condition* of guns advertised these standard phrases must be used: *Perfect* means factory condition. *Excellent* means new condition, implying negligible amount of use. *Very good* means practically new condition, implying little use, resulting in no appreciable bore wear and only minor surface scratches or wear. *Good* means moderate use with some finish worn off, only moderate bore wear with no pits and nothing worse than a little roughness in the bore. *Fair* means reasonably hard service, reasonable wear inside, nothing worse than minor pits in the bore, implying the gun is sufficiently accurate for hunting. *Poor* means marred appearance and pitted or badly worn bore.

Arms Chest Transactions must be based on good faith. Deliberate misrepresentation, will of course, result in expulsion from N. R. A. membership.

FEDERAL EXPLOSIVES ACT

Under the Federal Explosives Act of 1941 *all* buyers, sellers and possessors of powder and primers (not complete small arms cartridges) must be licensed. Purchasers must submit their license, or a certified or photostat copy thereof, to the seller at time of sale.

MEMBERS EXCHANGE

A quick, inexpensive medium for disposing of guns and accessories no longer needed, or for the purchase of more suitable similar items. We urgently request that a full description be given of every article offered, and its *condition* (see complete instructions above), for transactions of this sort must be based entirely on good faith and mutual satisfaction. Deliberate misrepresentation will of course result in immediate expulsion from N. R. A. membership.

Purchasers who wish to examine, before acceptance, guns or equipment purchased thru these advertisements should request shipment by express, C. O. D. *with examination privileges.*

FOR SALE

THE REVOLVER TIMING RECORD. A 10 inch RCA-Victor phonograph Record. Practice timed and Rapid-Fire anywhere, by yourself. Nothing to watch—just listen. For "dry" shooting basement and outdoor ranges. One side 10 second timing, other side 20 second timing. Plays on any phonograph. $1.50 postpaid. The Original Sight-Exchange, Box J, Paoli, Penna. 1-44

MANNLICHER-SCHOENAUER 9½ MM, BEAUtifully stocked, no sights, excellent, $60.00. 219 Zipper, Krag action, Springfield barrel, Weaver scope, special stock, 140 cartridges, 40 empties, 200 Sisk bullets, 200 primers, reloading dies, very good, $85.00. Fecker 12½ power, ¾ in. aperture, ¼ minute click mounts, $55.00. H. W. Cleveland, 1712 Ohio, Long Beach, Calif. 5-43

FOR SALE: COLT AUTO .380, 1 BOX CARtridges, fair, $25.00. R. A. Leeson, 10 High St., Boston, Mass. 5-43

2,000, .30-'06, 1918, IN GOOD SHAPE, 7¢ EACH; 7 boxes .38 Special S. & W. revolver cartridges, $3.00 per box; 1 holster, holds 36 cartridges, for .38 Police Positive, with shoulder strap, $3.00. Peter Courlas, 143 H. L. Dr., Johnson City, N. Y. 5-43

Magazine Delivery

YOUR AMERICAN RIFLEMAN may be delivered to you several days later than to subscribers in other sections of the country.

In spite of our careful mailing schedule there is a spread in delivery of approximately four days caused by circumstances entirely beyond our control.

This situation will most likely continue during the war and we earnestly request your patience.

ZEISS ZIELKLEIN SCOPE, NO. 2 PICKET Post with crosshair, Griffin and Howe single lever mount minus base, blueing worn, otherwise excellent, leather carrying case and lens caps, $60.00 money order; 4½" Woodsman, Heiser hand carved holster, excellent inside and out, with 200 long rifles, $60.00 money order. Melville A. Delaware, West Scarboro, Maine. 5-43

FOR SALE—8X WINCHESTER SCOPE, $13.50. Want—5 or 6 Power Cheap Field Glasses, Electric Hand Tool and Accessories. Si Sharp, Slatyfork, W. Va. 5-43

3, .45 COLT AUTOMATICS, $45.00 EACH; 3, .32 Colt Automatics, $25.00 each; .45 Colt Revolver, new never fired, 1917 Commercial Issue, $45.00; .45 Colt Frontier Single Action, $35.00; .32-20 Colt Single Action, $25.00; .44 S. & W. Top Break, $15.00; .32 Long S. & W. Side Swing, $15.00; .38 Colt Police Positive, $25.00; .32 H. & A. Top Break, $10.00; .32 Savage Automatic, $15.00; .22 Colt Woodsman, $50.00; .22 Hi-Standard, $40.00. Elliott Gillespie, 4816 Aldrich Ave., S., Minneapolis, Minn. 5-43

FOR SALE—.22 MATCH RIFLE, 1¼", 30" BARrel, by Johnson, engraved Ballard action, double set triggers, Lyman sights, Excellent, very accurate, $90.00; Winchester, hi-side wall, .22 Hornet, 28" barrel No. 3, Relined by Johnson, beautiful oil finished cheek piece stock, telescope height, with 6 power German make telescope, fine glass, fired less than 200 rounds, excellent, $75.00. Colts Official Police, .38 Special, 6" barrel, Blue finish, excellent condition, $40.00. Smith and Wesson .44 caliber breakdown, 6" barrel, blued, excellent inside, good out, $35.00. Max D. Martin, LaFontaine, Indiana. 5-43

WINCHESTER 97, 12, PIGEON GRADE, TRAP, without engraving, Weaver choke, excellent, $75.00. 410 Stevens double, tenite stock, excellent, $20.00. Colt Officers Model Heavy Barrel Target, .38 Special extra Target grips, 2 boxes shells, factory new, $75.00. S. & W. .32-20 M. & P. Model K, 6", Heiser holster, 2 boxes shells, excellent, $60.00. Winchester 94 Carbine, 32 Special, 2 boxes shells, excellent, $50.00. G. Bennett, Box 81, Hartford, Wisconsin. 5-43

A. B. DICK MIMEOGRAPH MACHINE MODEL 75, good, $20.00. WANT—Weaver 440-C. Cleo Warring, Sedan, Kansas. 5-43

ODD LOTS AMMUNITION, GUNS—SPEcializing in Single Shot Rifles for .22 conversion. Rare Sharps, Rifles and ammunition. Large list for 3¢ stamp. 10% discount to N.R.A. members. Paul (Single Shot) Ratliff, N4912 Market, Spokane. tf

COLT NEW SERVICE .45 BEAUTIFUL CUSTOM grips, figured walnut, excellent except minor pitting on cylinder, $49.50. Colt Official Police .22, embedded cylinder, honed action, excellent, 500 rounds Palma Match ammunition, $60.00. Bausch Lomb 65mm 20X team scope with Freeland combination aluminum low and high coaching stands, fine, all leather zipper case, all excellent, optically perfect, complete, $125.00. Kodak 35 F3.5 Kodamatic, self timer shutter, coupled range finder, deluxe sole leather case and Weston exposure meter, complete, $59.50. Genuine Luger 9mm, 7⅞" barrel, Military sights, excellent, except minor holster wear, 150 rounds new Kleanbore, $67.50. Ortgies .25 Auto, good, $20.00. Mauser .32 Pocket Auto, very good, $20.00. Winchester 94, new, .30-30, $37.50. Savage .32 Auto, good but poor bore, $14.50. Winchester 62A, new, $23.50. Remington Scoremaster 511, excellent, with Weaver 329 Scope, T mounts, $22.50. Savage Over Under 430, 12-26, imp. cyl., modified, excellent, $45.00. Weaver 29S, T mount, excellent, $11.50. Ocean City reel, long key model, 600 yd., with 24 thread line and South Bend roller tip rod with shoulder harness and rod belt, bargain, new, $75.00. Immediate refund if not satisfied with any purchase. B. S. Smith, 2523 39th St., Galveston, Texas. 5-43

BOOKS FOR THE DISCRIMINATING Sportsman: The Modern Gunsmith, Howe, $15.00; Complete Guide to Handloading, Sharpe, $7.50; The Muzzle-Loading Rifle, Cline, $7.00; The Bullets Flight, Mann, $6.00; A Forgotten Heritage, Davis, $4.00; Encyclopedia of American Hand Arms, Chin-Hardin, $8.00. All postpaid. C. E. Purdie, Faribault, Minn. 5-43

MODEL 37 REMINGTON RANGEMASTER, REDfield front, Remington rear, (as issued); 10X Fecker Scope; Sheepskin Case and Glove; fancy hand tailored sling with equalizer; 10X Imperial Coat, size 40; Loading Block; 1000 Kleanbore Regular 22 L.R. Shells; all very excellent, selected gun, fired less than 1000 rounds, all purchased new at same time. $175.00 complete, no trade or split. C. K. Anderson, 720 N. Broadway, Wichita, Kansas. 5-43

FOR SALE: "FAJEN" VARMINTER "SUKALLE" 26" 16 Twist Barrel, remodeled Enfield action, walnut "pup" stock, improved roller bearing trigger action, excellent condition. Price $100.00. Shipped C. O. D. Inspection privilege. Virgil Helms, Versailles, Missouri. 5-43

SELL: .38 OFFICERS MODEL COLT, 6", HEAVY barrel, perfect condition. Heavy leather holster and 2½" belt, both made and carved by Heiser, excellent. 100 new cartridges. $70.00. Ship C.O.D. examination. WANT—70 .220 Swift. D. LeVasseur, 110 West A St., Iron Mountain, Mich. 5-43

LARGE STOCK OF AMERICAN AND European Antique Arms. Send 10¢ coin for latest 9th edition catalog, featuring the important Dr. Buck collection. Antique arms wanted. We buy single pieces or whole collections. Fair prices paid. Kimball Arms Co., Woburn, Mass. tf

REMINGTON M37, NEAR PERFECT. USED SO little blue not worn anywhere. Factory test groups (included) average 0.82". Redfield front, no rear, scope blocks, $70.00. Lyman Tube sight, Merit Iris disc, 3 pt. Lyman mounts, $20.00. Argus 55 MM, 26X Spotting Scope, Freeland stand, practically new, excellent, $70.00. 2,500 Palma Kleanbore Fresh Stock, $25.00. Chas. Robert, R.D. #7, Johnstown, Penna. 5-43

Try a Want ad

Have you frequently had the experience lately of replying to a "For Sale" ad in the "Rifleman" only to find that some one else had beaten you to it?

We know it's disappointing, we know that on the average 50 persons replied to that advertisement and 49 of them, like you, were disappointed.

Next issue try a "Want" ad. Many members are anxious to help in this equipment shortage and will sell **you** an article they perhaps would not advertise themselves.

Remember—All ads for June issue must be received not later than May 5th. Let us have yours early.

JOHNSON AUTOMATICS
INCORPORATED

THE JOHNSON LIGHT MACHINE GUN OR MACHINE RIFLE

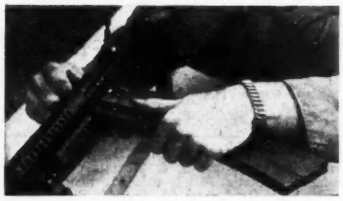
Caliber .30-.06—Weight 12½ lbs.—Capacity 25 Shots

For barrage fire at 1500 yards or snap-shooting at 50 feet

A two man crew can change magazines in less than 2 seconds

20 shot detachable box magazine—horizontal feed.

A versatile long range Automatic—that handles like a skeet gun for close work.



A single operator changing his own magazines can deliver 150 rounds per minute.

General Information on request

JOHNSON AUTOMATICS, INCORPORATED

84R State Street, Boston, Massachusetts, U.S.A.

WEAVER SCOPES, NEW MODELS 29S, 330, 440. 10% discount. Or exchange for optical items. S. A. Wentling, Palmyra, Pa. 5-43

SAVAGE .25-20 SPORTER, NEW, CASE, CARtridges, $40.00. H. & R. 20 Single Hammerless, new, pad, case, shells, $20.00. Ralph Drake, Osborne, Kansas. 5-43

.38 COLTS OFFICERS MODEL TARGET HEAVY Barrel, excellent to perfect and 150 loaded cartridges, price $65.00. Ernest H. Abbott, Johnsonville, New York. 5-43

WINCHESTER 70, .270 CALIBER, NEW, 54 REDfield, sling strap, $65.00. C. Welch, 97 Greenwich St., Pittsfield, Mass. 5-43

LATEST MODEL 52 WINCHESTER TARGET Rifle with standard barrel, 17A front sight and Vaver rear, sling. This gun is in factory condition, shot very little. M.O. $60.00. Kenneth Larsen, Forestwood Lodge, Grantsburg, Wisconsin. 5-43

WINCHESTER-ENFIELD, .30-06, WEAVER 29S, B-mounts, Bishop stock, sling, 60 rounds ammunition, very good, $60.00. Winchester-Enfield, .30-06, Weaver 330-C, crosshair, post, B-mounts, short trigger pull, Bishop stock, carved grips, sling, 150 rounds ammunition, very good, $70.00. Chester Heidel, 961 8th Ave., Brackenridge, Pa. 5-43

WINCHESTER 65, .32-20, $53.00; WINCHESTER 64, .30-30, $63.00; Savage 99EG, 300, $63.00; Remington Model 25, .25-20, $30.00. All above are brand new and one box of shells included with each. Remington 81-A 300, fired 6 times to sight in with 34 shells, $90.00. Winchester 64, .32 Special, excellent, with one box shells, $53.00. Winchester Model 03, .22 Auto, very good, with case and 500 shells, $25.00. Colt 25 Auto, $25.00; .380 Auto, $38.00; Both perfect and a box of shells with each. Send 10 cents for rifle and pistol shell list. Art. Miller, Stevens Point, Wisconsin. 5-43

.45 COLT N.S. 7½" BBL., REBLUED, MATTE finish, barrel very good, action hand honed, King red ramp front, patridge adj. rear. Special walnut grips, holster, ½ box ammunition, $50.00. Kenneth L. Kelly, Member, 1511 22nd St., N. W., Apt. 301, Washington, D. C. 5-43

SEARS DELUXE 3½ OUTBOARD, RUN VERY little, $50.00. Eugene Hopper, 1550 Ruth, Walla Walla, Washington. 5-43

FOR SALE: CURLY MAPLE, WALNUT and Cherry Stock Blanks. L. G. Stockberger, Garrettsville, Ohio. 5-43

KILBOURN-HORNET, DEADLY ON chucks and crows. 3,000 F.P.S. velocity with 45 gr. bullets, 2,900 F.P.S. with 50 gr. Your Hornet rechambered, $5.00. Magazines altered for long bullets. Winchester, Savage, $2.00. Lysle D. Kilbourn, New Hartford, N. Y. tf

MOUNTED MOOSE HEAD, GOOD SHAPE, small, $25.00. Walter J. Keenan, 1753 Eastern Ave., Cincinnati, Ohio. 5-43

ZEISS BINOCULARS 8 X 30, PERFECT CONDITION, with carrying case, $100.00. J. L. Wolters, 210 Franklin St., Bloomfield, N. J. 5-43

WINCHESTER 70 VARMINTER, LYMAN 48, Ideal reloading tool, 125 bullets, 75 primers, 80 cases, about excellent, $90.00. Winchester 70, .30-'06, Weaver .330 Scope, Turner mount, recoil pad, 160 O.P. bullets, 100 cases, 150 primers, 34 precision handloads, perfect, $145.00. Parker 12 Gauge Double Barrel, 30 inch full and modified, Jostam recoil pad, canvas case, cleaning rod, box of shells, about excellent, $55.00. Winchester 70 .30-'06 barrel, very good, $17.50. 300, '06 cases, $5.00. WANT—.270 reloading tool, bullets; Belding and Mull Powder Measure; 12 Gauge shotgun shells. Curran Bashore, Mifflintown, Penna. 5-43

NEW 3¼ X 4¼ SPEED GRAPHIC, RANGE finder, synchronizer, 6 holders, 15 doz. films, 1 case 25 press super flash. Never used, $235.00. Campbell Bligh, Claypool St., Nashville, Tenn. 5-43

MODEL 75 WINCHESTER .22 CALIBER RIFLE, perfect condition, fired less than 100 rounds, price $37.50. Elmer Carlson, Warroad, Minn. 5-43

EXCELLENT 2-R LOVELL SPRINGFIELD ACtion, heavy barrel, high comb, cheek piece, pistol grip, beautifully checked. Excellent 10X Targetspot, rib mount. Bench tool, full length die. Primers, cases, bullets. Outfit $125.00. Excellent .25 Colt Auto, shells, $20.00. Maj. K. W. Dech, Member, 2525 Berkeley Ave., San Bernardino, Calif. 5-43

WOODSMAN 4½ INCH, KING SIGHTS, PERfect, $50.00. Belgium Browning 16 Gauge, ventilated rib, aluminum compensator, perfect, $100.00. Parker V.H. Double, 20 Gauge, 26 inch barrel, perfect, $85.00. C. A. Pope, 4860 Nottingham, Detroit, Michigan. 5-43

H. & R. LINE THROWING GUN COMplete with trunk case, shells, lines, etc., $69.00. H. & R. one inch Very Pistol, $8.00. Remington Woodsmaster with two boxes of .35 caliber shells, $90.00. All new never fired. Hershey's, Orrville, Ohio. 5-43

WINCHESTER 63 AUTOMATIC .22, PERFECT, never fired, 200 cartridges, $48.50. Winchester 40, 12 gauge, full choke automatic; Weaver 1X scope B mount. Excellent plus, fired 20 times, 100 shells, $105.00. 300 Savage 99, perfect, never fired, 4 boxes cartridges, $80.00. WANTED—4 inch 357 Magnum; engraved National Match 45; Winchester 12, 12 gauge "Heavy Duck." James Townsend, 2545 Procter, Port Arthur, Texas. 5-43

SPECIAL SALE OF NEW AND USED shotguns and rifles. List ready. Stamp please. Kimball Arms Company, Woburn, Mass. tf

FIRST $6.00 TAKES 50 ROUNDS .357 MAGnum and 47 rounds .38-44 ammunition, prepaid. WANTED—Ready cash or new Ace with Sheepskin leather holster for new or perfect K-22 Masterpiece, bead sights preferable. W. W. Kothmann, Route #1, Brady, Texas. 5-43

NEW SLOCUMB PRECISION MICROMETER 1 to 2 inch, $10.00. Eastman Jiffy Kodak 127 with eight rolls film, $6.50. R. H. Cross, 307 W. 9th St., Waterloo, Iowa. 5-43

FOR SALE: ARNOLD CHECK WRITER AND protector, new, $7.50. Cummins check protector, $5.00. Woodsman holster, perfect, $1.75. Revolver spring shoulder holster, perfect, $3.75. Several thousand .22 Long Rifle Kleanbore, Palma, Hi-Skor, Hollow Point and Regular; will trade for non-corrosive pistol primers; also want .44 Special Colt or S. & W. Target Model and .44 Special Schmidt dies, etc. Jack Christoff, Milford, Delaware. 5-43

U. S. SPRINGFIELD, 1873, S.S., WITH CLEANing rod, 74 rounds 500 grain bullets, $12.00. 1, ¾ horse power Master Electric Motor, AC current, used little, $35.00. WANTED—Complete Ideal reloading set for .257 Remington Roberts; also waders size 11. J. Bryson, 7828 Champlain Ave., Chicago, Illinois. 5-43

SALE: WINCHESTER 94, .30-30, NEW, FACtory carton, box Super-X, auxiliary chamber, 50 rounds for same, first $50.00 M. O. WANTED—Cheap .30-'06 Springfield, action, barrel, sights, good to perfect, stock, immaterial, prefer serial number above 1,285,267, ammunition. Ed. T. Nance, Jr., 310 E. Lane St., Shelbyville, Tennessee. 5-43

FOR SALE: DELUXE MAUSER SPORTER, 8MM., double set triggers, semi-octagon ribbed barrel. Stoeger's model number 610, $177.50 list. Perfect in, excellent out. Price includes 2 boxes of ammunition. Sale price $100.00. Jack Koehne, 17 No. State Street, Chicago, Illinois. 5-43

Have You Moved?

Remember your postmaster cannot forward your RIFLEMAN unless you leave him "forwarding postage". Remember, too, to give us at least 30 days notice *before* moving. Always state your old address as well as the new one. Mail changes to the N. R. A., 1600 Rhode Island Avenue, Washington, D. C.

YES—I have moved (please print fill-ins)

from

OLD

*Name*_____

*Street*_____

*City*_____ *State*_____

to

NEW

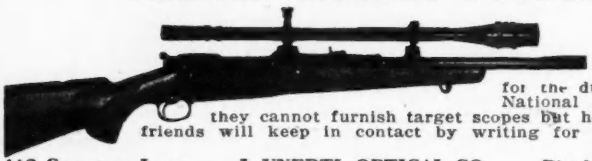
*Name*_____

*Street*_____

*City*_____ *State*_____

CHECK ONE ☐ Life Member ☐ Club Officer ☐ Annual Member ☐ _____

UNERTL TARGET SCOPES



To Shooter Friends, Unertl Optical Co. wishes to advise that for the duration of the National Emergency, they cannot furnish target scopes but hope that their friends will keep in contact by writing for Free Booklet.

412 Cemetery Lane **J. UNERTL OPTICAL CO.** **Pittsburgh (9), Pa.**

FOR SALE: 12/0 PENN SENATOR REEL WITH 500 yards 36 thread line, $100.00. 16/0 Penn Senator Reel with 750 yards 39 thread line, $125.00. New 850 yard 54 thread Ashway Tuna line, $35.00. New 500 yard 30 thread Vom Hofe Marlin line, $18.00. 35 Newton DeLuxe Engraved Rifle, one of the finest rifles Newton ever made, with eighty factory cartridges, peep and folding leaf sights, $185.00. Zeiss Movilcon 16 millimeter Camera, with 1" f.1.5 lens and 3" f.4 telephoto, in leather Zeiss case, $400.00. W. J. Holliday, Hammond, Ind. 5-43

52 WINCHESTER, #24055, LYMAN BLOCKS, sling, Vaver front, Lyman #52 micrometer rear, standard barrel, excellent inside, good outside, $47.50. Bull Pup, Magnum .22 Hi-Power 1-1/16"-30" barrel by Lovell, Clark Krag speed action, Bishop stock. Fecker blocks, loading tools, new cases, 400 primers. 400 bullets, accurate, very good, $65.00. New, unused, Enfield issue stock, $5.00. Fecker 1½"-8X extra eyepiece 12.5X, ¼" precision mounts, excellent, $68.00. L. Ross Garner, 826 Hammond Ave., San Antonio, Texas. 5-43

WINCHESTER 52 HEAVY BARREL 39872, LYman extension, very good or better, $50.00. D.C.M Sporter, very good, $55.00. Winchester Self-Loader 12 full, Model 1911, very good, $45.00. Lyman 5-A very good to excellent, $40.00. All C.O.D. subject to examination. WANT—Lyman Targetspot. Smith H. Lapsley, Box 2420, Tulsa, Oklahoma. 5-43

FOR SALE: APPROXIMATELY 2,000 ROUNDS 7mm Spanish Mauser Cartridges. 175 grain full metal patch, Winchester, smokeless. $5.00 per hundred. J. M. Chesser, 1407 6th Ave., Bessemer, Ala 5-43

.375 SHOOTING MASTER, PERFECT IN, V.G out, Kingized, holster, $95.00. New 7 mm. Winchester, Super grade, Lyman 48, fine case, 100 new ammunition, $148.00 200 rounds new .220 Swift ammunition, $20.00. .250 Savage 99-G, perfect in good out, 40 rounds ammunition, canvas case, $51.00 Barnet Adelman, 1103 Chimes St., Baton Rouge, La 5-43

.30 LUGER, 3¾" BARREL, FAIR, $25.00; 9mm or .30 Luger, 3¾" barrel, Franzite ivory grips, good, $40.00 each; .30 Luger, 3¾" barrel, good, holster, $45.00; .30 Luger, 8 inch barrel, squeeze safety, good, $60.00; .30 Luger Carbine, checkered forearm, 12 inch barrel, real collectors item, including holster, $125.00. Elliott Gillespie, 4816 Aldrich Ave., S., Minneapolis, Minn. 5-43

THE ORIGINAL SIGHT-EXCHANGE, BOX J, Paoli, Penna. Gun Sight Specialists. Mail us your old sights and tell us what you want. 1-44

REMINGTON AUTO, 16-28 IMPROVED CYLINder, perfect, $60.00. Will send C.O.D. examination. R. M. Ginnings, Macomb, Ill. 5-43

SELL, WINCHESTER 12-12, NICKEL STEEL barrels, V.G., $55.00. Remington Auto, V.G., $50.00. New Service Colt .44, holster and shells, $50.00. .41 Colts, $18.00. S. & W. .32-20, fair, blueing worn, $25.00. Two Pocket Watches, $25.00 and $35.00, or trade. Buy .35 Remington Auto Rifle and shells; small Johnson motor; .38 Colts or S. & W. Revolver and Frontier Colts; Powder Measure and Scales Waders and Boots size 12; Pressure Cooker. B. W Wilder, 4511 Browndale Ave., Minneapolis, Minnesota. 5-43

WINCHESTER 12-12-32, VERY GOOD TO EXcellent, $55.00. Winchester 63, 29-S Scope, near perfect, $52.50. Remington Speedmaster, Long Rifle perfect, $40.00. Winchester 1890, new barrel, new sights, $25.00. Winchester 1890, good to excellent $22.50. Winchester 03, 22 Automatic, good, ammunition, $20.00. Remington Model 10, 12 Gauge slightly pitted, $30.00. First money orders. H. J McKinnon, Clarinda, Iowa. 5-43

FOR SALE: CARL ZEISS JENA MONOCULAR 8 x 30 in leather case as new, $50.00. Zeiss Dekarem 10 x 50 light weight central focus, used one hunting trip, shows superficial wear, leather case, $120.00. Large Johnson Outboard Motor Model P.F.30, serial 45584, an old model but never used except as emergency power on cruiser, has long shaft for large boat, $150.00, or trade for .257 Roberts Model 70 with scope. Brand new 50mm Kodak anastigmat lens f.1.6 for magazine Cine Kodak. $120.00. Curtis Color Printer, never used $25.00. Federal Mogul Steel Propellor 24 x 24, $20.00. W. J Holliday, c/o W. J. Holliday & Co., Hammond, Ind 5-43

GENUINE MAUSER SPORTING .30-'06 WALNUT stock, cheek rest, 24" half round, half octagon barrel, with raised, matted, solid rib, double set triggers, front ramp silver bead sight and protector, rear tangent curve sight, sling, swivels, excellent inside and outside, weight 7¾ lbs., 29 cartridges, $90.00. George Oberfell, Box 110, Bartlesville, Oklahoma. 5-43

ANTIQUE AND USED FIREARMS. SEND 5¢ for list. H. A. Brand, 1008 Ingalls Bldg., Cincinnati, Ohio. 7-43

LYMAN 438, PLAIN MOUNTS, $15.00; EXTRA 438 mounts, $3.00; offset bases, $2.00; regular bases, $1.00; Mossberg 4X, Lyman type, click mounts, $5.00. Pfleuger automatic reel and line $4.00; Eastman Kodak, 2C with case, $10.00; Stevens 22x410, $18.00. All good or better. A. I. Lawson, Durand, Michigan. 5-43

COLT OFFICERS MODEL .38, HEAVY BARREL, 6", new condition, $65.00. Vincent DeSensi, 927 Tropical Avenue, Pittsburgh, Pennsylvania. 5-43

NEW RIFLING MACHINE, WITH LAPping machine, $1100.00. Photo 10¢. A. Hubalek, 1167 Myrtle Avenue, Brooklyn, N. Y. 6-43

ITHACA 12-30", MODIFIED AND FULL, LATE model, rib barrels, excellent in, bluing slightly worn, **$37.50. Lyman 438, excellent in, good out,** non-click mounts, $14.00. American Rifleman 1936 to 1940, 14 copies missing, $3.00 F.O.B. B. H. Esser, Washington, Missouri. 5-43

AMMUNITION FOR SALE: ALL REMINGTON Kleanbore; .300 Savage; 7m.m.; .25 Remington; .405 Winchester. Send stamp. WANT—.32 Winchester Special. Frank M. Harper, Jr., Box 1346, Raleigh, N. C. 5-43

PERFECT 99EG SAVAGE, CALIBER .300, $50.00. Perfect DHE Parker 12, single trigger, ventilated rib, etc., $200.00. C. E. Purdie, Faribault, Minn. 5-43

FOR SALE: MODEL 70, WINCHESTER .22 HORnet, with 225 rounds of ammunition, like new, less than 500 rounds fired from it. Price $60.00. David A. Minnick, 11 S. 4th Street, Frackville, Pennsylvania. 5-43

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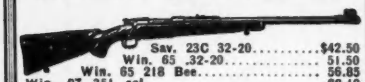

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JOHNSON HEAVY BARREL 52 SPEEDLOCK, scope, fancy custom stock, 1500 cartridges, $110.00. Newton 256, Redfield, 53 factory loads, 61 empties, 417 primers, can 3031, Pacific tool, mold, $110.00. Mariners brass telescope, 45X, $35.00. Electric Pot and quantity bullet alloy, $30.00 T. B. Sherzer, 17 East Florida, Evansville, Indiana. 5-43

.22 HORNET, DUBIEL-BALLARD-SCHEUTZEN, 32 inch Dubiel ½ octagon barrel double Scheutzen set-trigger, No. 1 Lyman rear, ivory bead front sight, No. 7 spur-loop lever with checkered wood block, blued action, exquisite Dubiel Circassian walnut stock and forearm, scope blocks, prong Scheutzen buttplate, superbly accurate, perfect condition, very finely checkered, must be seen to be appreciated, $110.00. .22 Long Rifle Scheutzen Ballard, plain blued action, double Scheutzen set-triggers, Winchester barrel, 28½ inches, Orthoptic front sight (windgauge), #103 Lyman rear, scope blocks, palm rest, exquisite Petersen "perch-belly" type Scheutzen walnut stock, large beavertail type forearm, both finely checkered, #7 spur-lever, exceptionally accurate, perfect condition, prong Scheutzen buttplate, $110.00. .38-55 Winchester-Ballard for rest shooting, made to order by Winchester, heavy 30½ inch round barrel, single trigger, nickeled action, long No. 5 loop lever, exquisite walnut stock, diminutive forearm and pistol grip cap of tortoise shell, with "Clark" full length scope, superbly accurate, "Made 13 consecutive ones on the Columbia Target at Walnut Hill," $100.00. .32-40 Pope-Winchester-Ballard Scheutzen muzzle loader, with false muzzle, bullet starter, double Scheutzen set-triggers, mottled case hardened action, #7 lever, special Scheutzen stock and forearm, windgauge front sight, vernier rear, 30 inch octagon barrel tapped for scope blocks, excellent condition, Pope Mould, $100.00. .28-30 Stevens-Ballard Scheutzen, double Scheutzen set-triggers, windgauge front, vernier rear sight, original Ballard stock, forearm has base for palm rest, tapped for scope blocks, No. 3 lever, extra .22 long rifle barrel with scope blocks, barrel bored eccentrically so that it will interchange with .28-30 barrel and can be fired with same firing pin. Rifled by Pope we believe, ammunition box with 105 cases and mould, excellent condition, $100.00. Pope Lubricating Pump, .32-.40 and .38-.55 dies, $10.00. Model 92, .25-20 Winchester Repeater, takedown, standard sights, new condition inside, very good out, Lyman 103 tang sight, $50.00. Model 94, .30-30 Winchester, takedown, Shotgun butt, octagon barrels, double set-triggers, with interchangeable barrel for the .38-55 cartridge, Lyman #1 rear, excellent inside, very good outside, sling swivels, ivory front sight, folding palm rest, a splendid outfit, .30-30 barrel tapped for scope, .38-55 barrel has 17-A front, $75.00. Stevens Premier .25-20 S.S. tip-up action, 30 inch half octagon barrel, Swiss butt, nickeled action and buttplate, Globe front sight, folding rear, and Stevens-Pope vernier windgauge sight with adjustable 6-hole aperture on tang, very good condition, $35.00. .25-36 Marlin takedown, pistol grip, Lyman #1 rear, folding front sight, very good inside and out, except that the stock has a slight varnish scratch, checkered, $40.00. .22 Winchester WRF Single-Shot Rifle, 28 inch octagon barrel, low side, action very good, stock and forearm good condition, bore good, Lyman #1 tang sight, Lyman front, $25.00. 256 Newton barrel threaded for .30-'06 Springfield action, Springfield front and rear sights, excellent condition, 100 cases, 50 primed, $20.00. French Gras bolt action Military Stamped 1874, 11mm., very good condition, $15.00. .32-40 Ballard barrel, with forearm, Forearm has had palm rest fitted, but this is missing, original Ballard forearm, inside barrel good, wood fair, $7.50. Original Ballard stock with cheekpiece, pistol grip, checkered, very fine condition, $15.00. Military Bolt Action, service unknown, Vetterli, very good condition, about .45 caliber, $7.50. .32-40 Remington-Schoyen-Ballard Scheutzen, double Scheutzen set-triggers, 28½ inch barrel, California redwood Scheutzen stock, rosewood forearm, scope blocks, plain action, No. 3 lever, forearm drilled for palm rest, very good condition, this is not stamped "Schoyen" on barrel, but was sold to me as such, $70.00. Winchester Scope A.5, ordinary non-click mounts, leather case, very fine condition, $40.00. 40-70 Ballard Scheutzen 32" barrel, half octagon, single trigger, Scheutzen stock, cheekpiece, Scheutzen buttplate, checkering, vernier tang sight, windgauge front, very fine, $65.00. .22 Colt Automatic, early model, 6" barrel, inside fair, outside good. 300 cartridges, $25.00. Ammunition for all guns except French Gras and Vetterli. All prices F.O.B. Money order or certified check. Satisfaction guaranteed on three day examination or money refunded. James Farr, 20 Vandeventer Avenue, Princeton, New Jersey. 5-43

BEAUTIFUL JAEGER TELL ACTION, HAMmerless, speedlock, double set trigger, Mann-Niedner pin, Niedner 26 inch barrel, Shelhammer stock, blocks, .25 Krag, 38 cases, 68 Loads, ¾# 3031, ½# 2400, 1# 4064, 700 primers, 140 jacketed, 150 lead, dies, $125.00. 438, mounts, $10.00. B. & M. #28, .30-'06, .30-40 and .25 Cal., $16.00. B. & M. Powder Measure, $6.00. Colmont 8X. $25.00. Stamp please. Gene Crowley, Caledonia, Mich. 5-43

WINCHESTER 70, .30-'06. BEAUTIFUL BIRDSeye Maple stock with Monte Carlo comb, 330 Weaver with Lee dot. Pacific tool, shell trimmer, bullet sizing die, 169 grain Ideal mould, 110 primers, 100 cast bullets, ½ pound 3031 powder, 50 cases. Rifle $135.00. Outfit $165.00. H. Carmichael, 395 Houston, Coalinga, California. 5-43

FOR SALE: BINOCULARS: BAUSCH Lomb 6x25, $48.00; B. & L. 6x30 Military, $60.00; B. & L. 6x30 U.S. Signal Corps, $64.00; Ross 8x24, $42.00; Goertz 8X Ladies, $38.00; Hensoldt 8x24, $45.00. 16S Longines, $26.00; Elgin, $20.00; 12S Illinois, $22.00; Hamilton, $26.00. All open, gold, 17J. All very good. Paul Schweer, Donnellson, Iowa. 5-43

GUNS FOR SALE: .30-06 ARMY ISSUE type, good, 100 shells, $35.00. 300 Savage 99EG, new, 40 shells, $90.00. 303 Savage, good, new barrel, fired 18 times, 80 shells, $45.00. .30 Remington Automatic, excellent, 80 shells, $75.00. .22 Automatic 63, excellent, same as new, $55.00. .22 Automatic Winchester 1903, very good, $30.00. .22 Remington Special 12 Model, 100 shells, $30.00. .22 Remington Regular Model 12, new, $45.00. .22 Harrington-Richardson 922, excellent, $20.00. Iver Johnson Super Sealed Eight Model 88, $35.00. .38 Colts Special, excellent, $35.00. .22 High Standard B, excellent, as new, $50.00. 410 Winchester Repeating, brand new, 100 shells, $60.00. 20 Gauge Stevens Single, new, 100 shells, $15.00. WANTED—Will Pay $17.50 per 1000 .22 long rifle shells Hi-speed. $15.00 for regular long rifle. Pay $3.00 per box 20 shells .30-30, must be late MFG. Pay 75¢ per box .22 Winchester Automatic 1903 Model and .22 Specials. V. L. Olmstead, 530 So. Franklin St., Ponca City, Oklahoma. 5-43

MAHOGANY, GLASS-ENCLOSED, DIAMOND Scale, a most fine one, $17.50. Druggist Prescription Scale, glass cover, fine, $15.00. Heavy .22 caliber barrel blank, fast twist 1⅛" x ⅞" x 29", new $25.00. 100, 257 Roberts Super-X, $12.50. 200, 219 Zipper Super-X, $20.00. WANTED for cash—perfect .22 Repeater Crossman; Pacific dies; .220 Swift; .219 Zipper. Stamped addressed envelope please. William Willis, Attica, Indiana. 5-43

S. & W. .32-20 REGULATION POLICE, SIX INCH barrel, perfect, $30.00. French Vion range telescope, 33X lens, caps scuffed lightly, $25.00. Redfield rear peep sight #102R, $4.50. Light weight leather saddle scabbard with straps wide mouth for bolt action, new, $6.00. Khaki aviators suit, sheep skin lined, zippers, $40.00. Frank Mossteller, #910 W. Lovell, Kalamazoo, Michigan. 5-43

SEND FOR LIST OF FEW GUNS AND AMmunition. WANTED—Hornet Rifle and ammunition, dies for Schmitt #24 or loading tool. Stamp for reply. Edmund Fickert, R. #1, Box 180 Toms River, New Jersey. 5-43

SMITH & WESSON SAFETY HAMMERLESS REvolver, 4", good outside, very good inside, $30.00. Good Savage Pump .22, Model 1914, $18.00. Unfired Winchester 74, .22 Long Rifle, automatic, peep sight, factory carton, $24.50. French Lebel, 5 clips, good, $15.00. Winchester 12, 20 gauge, 26" full, very good inside, good outside, case, $45.00. National Pump, 12 gauge, improved cylinder, 28", excellent outside, good inside, $35.00. Winchester 97, 12 gauge, 30", full, excellent outside, good inside, $35.00. W. Turgeon, Oklee, Minnesota. 5-43

A FEW THOUSAND .22 L.R., EITHER SOLID OR Hollow, at $13.00 and $14.00 per M respectively, Western, Winchester and Kleanbore, all fresh stock mostly Hi-Speed. Few 270, 130 grain O.P. and 100 grain S.P. at $2.80 box. Model 72 Winchester shot less than 20 rounds $19.00. One 48 Lyman sight for Mauser without disc, $9.00. One Redfield 102 sight for Mod. .30 Remington, $4.00. Stamp for reply. Harvey Buckridge, Box 101, Hamilton, Montana. 5-43

LONG KRAG, AS ISSUED, BORE PERFECT, $32.50. Colts .45 Revolver, 1917, good, $28.50. Portable typewriter, Remington Remette, perfect, $55.00 or perfect Colmont Featherweight Binocular. T. H. Turner, Seaford, Delaware. 5-43

NEW WINCHESTER .30-'06, ENFIELD, FIRED 12 shots, $35.00. .401 Winchester S.L. Rifle, excellent plus, 19 cartridges, $62.50. New 10 gauge Winchester, lever, .32, full, Hawkins Pad, 200 noncorrosive maximum loaded shells, $55.00. .38-40 S.A.A., 5½", good, $20.00. D. B. Conley, Swampton, Kentucky. 5-43

550 REMINGTON AUTOMATIC, PERFECT, $26.00. Winchester 03, good, 200 shells, $25.00. H. & R. .32 Automatic, excellent, grip chipped, $22.00. Krag, 24" barrel, good, $25.00. .22 Western Field, Mossberg Scope, perfect in, good out, $30.00. WANT—Ammunition, .22 Automatic Pistol or what have you? Francis Yonker, Mantua, Ohio. 5-43

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REMINGTON WOODSMASTER .35 WITH CARtridges, perfect, $68.00. Winchester 95, .35 and cartridges, V.G., $40.00. WANT—Poor guns for parts. Fred Herrick, Seeley Lake, Mont. 5-43

60 ISSUES OF AMERICAN RIFLEMAN, 1938 TO 1942, $7.00. Will pay $12.00 for excellent 98 Mauser actions. WANT—good Krag carbine, stock immaterial Warner Corwin, Lake City, Michigan. 5-43

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SELL—320, 7.62 RUSSIAN CARTRIDGES, $15.00. TRADE—80, .250-3000 empty cases. WANT—FA-70, Western #8½ primers, Pacific Dies, 45-70 etc., Ideal #25727 Hollow Point Mould, .22 jacketed bullets, Ideal tong tools, Sharps Borchardt Rifles, paneled action, original calibers. W. Bley, 101 Haverford St., New Brunswick, N. J. 5-43

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SAVAGE 99, .250-3000, BEAVERTAIL FORE-END. 50 cartridges, very good, $55.00. Winchester 92, .25-20, fair, $20.00. Colts S.A. .45, 5¾" barrel, 40 cartridges, good, $30.00. Foster G. Marshall, 6936 Pearl Street, Jacksonville, Florida. 5-43

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NEW .30-30, 94, 60 CARTRIDGES, $42.00. NEW .30-30 Marlin, 60 cartridges, $37.00. New .218 Bee, peep, 220 cartridges, $60.00. Excellent .32 Special 94, 60 cartridges, $35.00. .32 Brescia Automatic, good, $15.00. .30-30 cartridges, $4.00 box. TRADES. WANT—.70-06 and scope, 35 Remington. Robert Nelson, 316 3rd Avenue, Linden, New Jersey. 5-43

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LATEST M52 SPORTER, PERFECT EXCEPT slight blue wear, trigger guard used little, $80.00. Latest Ithaca Featherweight M37, 16-28" F., perfect, $55.00; 75 heavy loads, $5.00. Colt .32 Auto, excellent, 110 Kleanbore, $30.00. Argus C-2, F 3.5 Camera, excellent, $35.00, everyready case. Eastman M60, F1.9, 8 mm. movie, excellent, $65.00. Eastman case. Remington M11, 12-28" F., $50.00. Some trades. Want—75S hunting scopes, mounts for 75S M70. Bert Dutcher, Hancock, Minn. 5-43

FOR SALE: 52 STANDARD BARREL NON Speedlock. Lyman 48T, 17A front with extra inserts, blocks, factory sights included. Will shoot possibles, fair to good. $35.00. W. H. Hendley, Route 2, Box 432, Modesto, Calif. 5-43

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MODEL 70 K-HORNET, SPECIAL BEDDING, dime size groups, 440 Weaver, Redfield mount, Perfect inside, excellent out. Pacific dies, 450 Bullets, 350 primers, 4 lb. powder fresh, all $153.00. No part sale. E. D. Vissing, Idaho Falls, Idaho. 5-43

SAVAGE SPORTER 25-20. WEAVER 329S SCOPE; sling; inside excellent, outside good; 130 rounds ammunition, Price $45.00. Savage Sporter 22 L.R. Peep and open sights; same condition, Price, $25.00. Winchester Model 12-12 ga., 30 in. full choke. Less than 1 box shells fired through it. Factory condition, Price $65.00. G. F. Snider, Box 213, Connersville, Indiana.

PERFECT 23 JEWEL WALTHAM RAILROAD Watch, $50.00. Wanted—B. & L. 65 mm. Prismatic. S/Sgt. Albert Mikolaitis, Fort Banks, Mass. 5-43

98 MAUSER AS ISSUED, GOOD IN AND OUT, $18.00: 98 action, very good, $12.00. Robert A. Marshall, 817 Abston Avenue, Ferguson, Missouri. 5-43

WINCHESTER 75 TARGET REDFIELDS FRONT and Rear, Sling, Excellent Condition: Stevens 22-410 Walnut Stock and Fore-end, Very Good. Grip and Fore-end nicely checked. Both for $60.00 Money Order. W. A. Burke, 7000 South Shore, Chicago. 5-43

MATCH TARGET 22, EXCELLENT, SPECIAL Grips, Sheepskin Case, $65.00. Want—Excellent M70 or other 257 Roberts, Ammunition, tools, components. J. W. Quenichet, Grider Field, Pine Bluff, Arkansas. 5-43

SUPER GRADE WINCHESTER, MODEL 70, caliber .30-'06, Lyman 77 and 48 Micrometer sights, excellent plus with 60 F. A. cartridges, $110.00. Winchester 70 Hornet, shot 100 ctgs., with B mount, also drilled by G. & H. for Redfield Jr., with factory new Weaver 344 and 100 cartridges, $90.00: with excellent Weaver 330, $105.00. Elton Cornell, Charlestown, N. H. 5-43

ENFIELD, ISSUE, EXCELLENT TO VERY good, 20 cartridges. $38.50. First money order. Stanley Ainsworth, Coleraine, Minn. 5-43

NEW: WINCHESTER 70, .300 MAGNUM, $78.45; Model 71, .348, Deluxe, $74.65; Also cartridges with each. Send self addressed card. No money. C. E. Purdie, Faribault, Minn. 5-43

.30-'06 SPRINGFIELD SERVICE RIFLE, 1525946, unfired, $60.00. Another very good, $50.00. Two more good, $35.00. Mauser carbine barrel and action, good, $12.50. Springfield action, excellent, $25.00. Belgian Mauser, unserviceable, $7.50. Springfield bayonet and scabbard, $3.00. M1 .22 Springfield bolts, nickel-steel, $3.50. John Gschwind, 4124 N. Leamington, Chicago, Ill. 5-43

$1.00 GOVERNMENT ATMOSPHERE SLIDE Rule, Used, Directions on rule, Cost $10.00. Weil's Curiosity Shop, 12 Strawberry Street, Philadelphia, Pa. 5-43

FOR SALE—1 WINCHESTER MODEL 70, 375 Magnum, Lyman 48, Perfect to Excellent, $85.00; 1 Winchester S.S. .22 Short Musket, High wall, Heavy action, Coil spring, Long Lever, 28 inch bbl., round, perfect, $35.00; 1 Winchester Single Shot, .38 WCF, Low Wall, Case Hardened No. 1 octagon 28 inch bbl., new semi fancy checkered stock, excellent, $27.50; 1 Win. S.S. Low wall .32 WCF, new 28 inch No. 1 octagon bbl., fancy checkered wood pistol grip, Swiss butt plate, 100 cartridges, Reloading tool, $42.50, perfect, a beautiful gun, have to see to appreciate; 1 Winchester S.S. Low wall, .25 Rim fire, No. 1 octagon bbl., new 26 inch, shot gun butt, pistol grip, fancy wood, perfect, $32.50; 1 Stevens S.S. #44, .22 Long Rifle, new 26 inch round bbl., factory rebuilt, perfect except stock, $25.00; 1 Winchester S.S. 40-60 High wall, No. 3 octagon bbl., inside slightly pitted, outside painted black, Needs refinishing, reloading tool, mould, 35 cartridges, $17.50; 1 Marlin 1892 Repeater .32 Rim fire and Center fire. New 24 inch octagon bbl., firing pins for rim and center fire, perfect, $30.00; 1 Winchester S.S. 25-20 Low wall, fair, $12.50; 85 cartridges @ .03 each. Nellie B. Leavitt, 8 Occom Ridge, Hanover, N. H. 5-43

SAVAGE M19 22 HORNET, VERY GOOD, SLING, special 29S scope, 35 cartridges, $60.00; Woodsman 22, perfect, special ivory grips, 5 boxes ammunition, $67.50; Remington M12, 22 cal., new, Lyman Sight, 6 boxes of ammunition, $35.00; Crescent single 12 gauge, very good, 4 boxes shells, $12.00. WANT—250-3000 loading outfit complete; Will trade 12 gauge shells for #8½ or #115 Primers. Ken Nelson, Bennington, Nebr. 5-43

THUNDERBOLT BULL PUP .230, BEAUTIFUL Tiger Flame maple stock, Enfield speed action, cocks on opening, extra heavy 26½ barrel, 100 new cases, 30 loaded, 170, 70 grain bullets, 200 primers, 4 lbs. 4350, tools, $60.00. Farquharson Lovell, takedown, relined 21" barrel, 700 primers, 65 new cases, 60 loaded, 100 bullets, tools, $50.00. 325 .30 cal. 110 grain bullets, $9.00. David Russell, Hayneville, Alabama. 5-43

OVER SUPPLIED WITH LOVELL COMPOnents, willing to share with individuals. Stamp. Floyd Hartman, 643 Elm Street, Buffalo, N. Y. 5-43

K-HORNET 23D SAVAGE, 29S SCOPE, STITH Mount, very good, 200 cartridges, .300 primers, 300 Sisk bullets, $75.00. D. H. Smith, Route 4, Norfolk, Va. 5-43

REMINGTON 37, COMPLETE WITH STANDARD Remington sights, inserts, sling, and two clips. Barrel excellent, stock slightly marred, $52.00. B C. Stickler, 514 Washington, Quincy, Illinois. 5-43

WALNUT-HILL #417, #77 FRONT, #144 REAR, excellent in and out, extremely accurate, $60.00. E. L. Sanderlin, Monsanto Chemical Company, Anniston, Alabama. 5-43

MAUSER .30-'06 SPORTER, 24 IN., OPEN sights, pad, good, $50.00; Winchester '92, 218 Bee, rebarreled, excellent inside, 50 ctgs., $35.00; Winchester '92, 25-20, good, 24 in. round, solid frame, 50 ctgs., $20.00; S&W Military, 6½ in. blue, .455 cal., excellent, $40.00; 100 F. A. .30-'06, '40, $6.50; 85 .30-'06, '17, $3.00; 50 new empty, 10 gauge brass shells, primed, $5.00. F. A. Baker, Donnelly, Minn. 5-43

COLT'S .38 ARMY SPECIAL, BLACK FINISH, Audley holster, 30 cartridges, very good, $37.50; .45 Colts Automatic, overhauled, 10 new parts, $35.00. H. Crossett, 925 South 3rd, LaCrosse, Wisconsin. 5-43

WINCHESTER 70 STANDARD 300 MAGNUM, new condition, sling, sheepskin case, 10 boxes Core-Lokt, $106.00; Brand new Winchester Goose Gun, Write; Ranger 410 Bolt Action Factory Carton, 50 shells, $20.00; 1500 F. A. Cases, some primed, $10.00; Spotting Scope Fly-Rod Outfit, used twice, perfect, cost me $40.00, $25.00; "Sterio" Prismatic 8x30 Binoculars, case excellent, $30.00, valued $50.00. Assortment Bullets, ammunition. S. Gerhardt, Jamaica Plain, Mass. 5-43

.45 NATIONAL MATCH, SHEEP LINED holster, shot less than 50 times, 400 rounds '33 ammo., 1 box factory, $99.50; .38 Super "Match", extra clip, 20 shells, $67.50; Original factory new .45, 7½, honed action, Bisley serial 253129, box shells, $67.50; .44 Special 6½, target sighted Triple lock, magnum grips, 400 Keith lead bullets, 500 primers, box shells, $75.00; .32-20, 7½, honed action, box or more shells, Bisley, $39.50; 401 Automatic, extra clip, over box shells, new shape, $65.00; 45-90, '86, oiled stock, box shells, new condition, $42.50; 38 D. A., 4½", long Colt or wadcutters, Pearl grips, box shells, $32.50; 500 #3½ Peters and 40 #4 Winchester primers and as is Ideal Capper, $5.50. Money order or C. O. D.'s. WANT—Model 70, 22-3000 R2 Lovell; 65-218 Bee, high grade Western saddles, chaps or silver bits and spurs. S. S. Jeppesen, R. R. #1, Hill Top Ranch, Hickman Mills, Mo. 5-43

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COLT .32 AUTOMATIC, $22.50. ARMY Special, 38x6, $45.00. Savage .32 Automatic, $20.00. H. & R., 32x3, Premier, new, box cartridges, $20.00. H. & R., 922 Target, $13.50. I.J., 32x3, hammerless, holster, $12.50. Six Revolvers, P-VG, as is, $25.00. Deluxe Bishop, Buhmiller Sporter, Target and Snipers Rifle; .30-06, 330 Weaver B mounts, Target Scope Blocks, embossed sling, unfired, beautifully figured stock ready for oiling, $125.00; oiled, checkered $145.00. Winchester 94, .30-30 Carbine, new, case, box cartridges, $50.00. Marlin 36, .30-30 Carbine, latest, as new, box cartridges, $42.50. Winchester, 1884, .32-20, FM, fair, $17.50. Winchester, 52 Standard, 17099, 17-A, receiver peep, scope blocks, sling, excellent in, good out, $35.00. Belgian Browning 12 Gauge, automatic, Weaver choke, 2 tubes, wrench, bag, $85.00. Remington Sportsman, new, 16x26, mod., $75.00. Ithaca #2, Double, new, 28x28, $74.50; 10 boxes shells, $2.00 each; Gun, Shells, Wood Rod, all $90.00. Finely engraved Lefever 10 Gauge, Double, hammer, stock cracked; James Allen finely engraved 10 Gauge Percussion Double, sound, both $20.00. L. C. Smith, Specialty, Single Trap, 34", VR, Lymans, pad, used very little, $85.00. Western Super Skeet Shells, 12, 20, 410 gauges, $2.00 box, or trade for Rifle, Revolver Ammunition. 9 boxes Winchester, .30-06, PE, 150-180-220 grain, $22.50. WANTED—Ammunition, all kinds, no lot too small, too large, buy, trade. Guns: .30-06, 70, Super; Issue; 52 HB, outfit; 75 Sporter; 22 OM; .45 ACP, others. Late Portable Typewriter. Gun Cases. Rifleman and Binder, '36, older. Gun Books. Ship guns, ammunition, etc., prepaid for fair return offer, cash or trade. List 10¢ coin. Buy. Sell. Trade. Member. Gordon Joslyn, Greenfield, Mass. 5-43

SPORT WOODSMAN, EXCELLENT PLUS, carved holster, money order $46.50. Lester Tupper. 124 N. Franklin, Madison, Wis. 5-43

PARKER GH 12/28 FULL AND IMPROVED modified, ivory sights, very good, $65.00. Two M/75 Winchester 10-shot clips, new, $2.50. R. C. Comingore, 1006½ 4th Ave., Sioux Falls, South Dakota. 5-43

7.63 MAUSER AUTOMATIC, VERY GOOD, 100 cartridges, clips, $55.00. Springfield .22 Automatic Rifle, good out, excellent in, Weaver 329 Scope, Sling, $27.50. WANT—Mossberg 51M Automatic, Hi-Standard, Model A or E. Must be excellent. Capt. Buck Brown, Rt. 1, Largo, Fla. 5-43

FOR SALE—37 REMINGTON, REMINGTON rear sight, Redfield front, old type action but crisp trigger, inside excellent, outside very good, with sling, $45.00. WANT—Winchester 52 Sporter. Elmer Iverson, Route #4, Grinnell, Iowa. 5-43

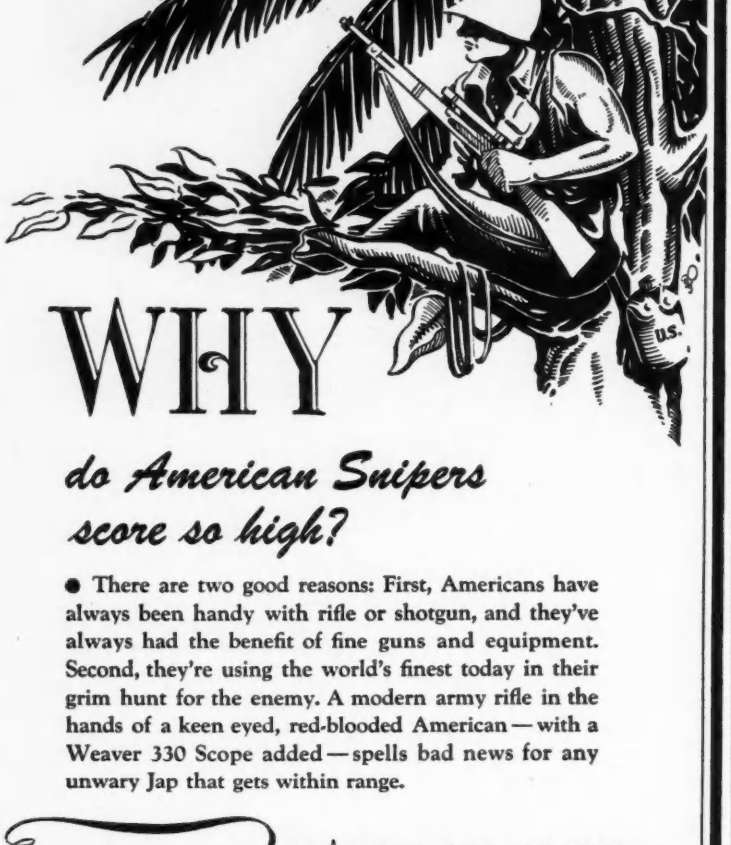
SMITH & WESSON 38 SPECIAL TARGET, humpback hammer, grip adapter, blueing worn very slightly at muzzle otherwise excellent, have used nothing but midrange loads, $65.00. Very good sheepskin holster only for same, $2.00. Browning "Sweet 16" special lightweight automatic 5 shot, 6-¾ pounds, will take 2-¾ and new crimp shells, 26 inch polychoke barrel, extra 26 inch improved cylinder barrel, perfect, 125 Peters DeLuxe 3, 1-⅛, 7 ch. 100 Remington Shurshot 2-¾, 1, 7-½ ch., $140.00. WANT—for cash, Lyman Alaskan All-Weather Scope with or without mounts, excellent, perfect. Jack Tandler, 1203 Second National Bank, Saginaw, Mich. 5-43

SPORTER RIFLE, MAUSER 8MM, $60.00; Springfield .30-'06 with 3X B&M scope, $100.00; Enfield .30-'06 Winchester barrel, $65.00; Savage .30-'06, $50.00; Colt's, .45 Shooting Master, $60.00; Super .38 Automatic, $50.00; Remington Model 11, 12 gauge Automatic, 2 barrels, 28 full, 26 Cutts Comp, $90.00. All excellent, others write. WANT—Colts Detective .38 Bankers .22 Special, Remington O&U Skeet Ventilated Rib, or ? Frank J. Carr, R. D. #2. Binghamton, N. Y. 5-43

.45 AUTO, PERFECT IN, GOOD OUT, 125 cartridges, extra clip, $45.00. Issue .45 Auto, 300 @ 5¢, .35 .32 Auto $1.50. Kleanbores 50 .38 S&W, $3.00; .45 Auto $4.25; 150 .38 Positive, $9.00. James FitzGerald, 3609 N. Murray, Milwaukee, Wis. 5-43

FOR SALE—.45 COLT AUTOMATIC (COMMERcial), $38.50; Smith and Wesson, Model 1917, $52.00; Remington .380 Automatic, $24.00; Savage .38 Automatic, $23.00; Colt .45, single action, Army, 5½ bbl., 32.00; Browning Auto, rib barrel, 16 gauge, full, $46.00; Remington Model 8, Caliber .35, 18 ctgs., $42.00. Guns will rate good or better. Remington Model 25, caliber .25-20, Excellent, $35.00; Ideal 270, Loading Chamber, muzzle sizer, $2.75. WANT—Marlin Over-Under 20 gauge, single trigger, will trade. Further information send stamp. A. T. Hagen, Madison, So. Dak. 5-43

SCHUTZ BINOCULARS, 10 X 50, INDIVIDUAL focus, excellent; case, good, $100.00 money order. Leonard Pietsch, 2208 W. 5th Avenue, Gary, Indiana. 5-43



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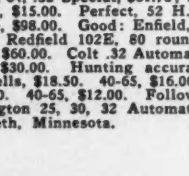

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NEW—SAVAGE 99 EG'S, 300, 250-3000, $61.75. Winchesters 64, .32 Special, $61.75; 37-16 gauge, 50 buckshot, $15.00. Perfect, 52 H.B. 17A, 4X Fecker, case, $98.00. Good: Enfield, remodeled, 3X Weaver Redfield 102E, 80 rounds 1918, 20 commercial, $60.00. Colt .32 Automatic, holster, box shells, $30.00. Hunting accuracy: 1886's, 40-82, 13 shells, $18.50. 40-65, $16.00. Marlin's .30-30, $14.00. 40-65, $12.00. Following $10.00, 100: Remington 25, 30, 32 Automatic. Ernest Juola, Eveleth, Minnesota. 5-43

8MM. GERMAN ARMY RIFLE, BARREL GOOD, stock fair, 28 rounds ammunition, $20.00. Paul Bateman, LaPorte City, Iowa. 5-43

$1.00 GOVERNMENT LEATHER HOLSTERS for 45 automatic pistols. Slightly used. Weil's Curiosity Shop, 12 Strawberry St., Philadelphia, Pa. 5-43

OFFICERS MODEL .38, 7½", PERFECT; SHEEPskin Holster, $60.00. Lieutenant E. E. Sack, USNR, 3037 Austin Street, Corpus Christi, Texas. 5-43

PERSONAL COLLECTION. SPRINGFIELD AS Issued, 400442, good to very good in, good out, accurate, $45.00. Remington Enfield as issued, excellent out and in, $45.00. Ross Model Ten, as issued, 303 British caliber, perfect in, nearly excellent out, heavy barrel, $35.00. Ross Model 16, as issued, except forearm cut, 303 British caliber, perfect in, very good out, heavy barrel, accurate, $35.00. Remington Russian, as issued, perfect in, excellent out, $30.00. French Lebel 8mm. as issued, excellent out and in except slight darkness in bore, $30.00. Krag Rifle, as issued, excellent in, good out, nice clean stock, $30.00. Arvid Nordell, Cadillac, Michigan. 5-43

HESSION SELECTED BULL 52, HART trigger, checkered Marksman #1 stock, no sights, perfect inside, excellent outside, **$85.00. Claude Roderick, Monett, Missouri.** 5-43

70-06, 48 REAR, DETACHABLE SWIVELS, $80.00. .22 Springfield, B. & M. 7X target scope, very good, $65.00. .22 L.R. Winchester Schutzen, palm rest, dbl. set, barrel by Ackley 1¼" x 1" x 28", excellent, $60.00. Winchester, H. S., single set, .32 Ideal, #4-30" octagon barrel, very good in, good out, empties & tool, $25.00. WANTED—Contax II with Tessar F2.8 lens. Dean Allison, Philipburg, Pennsylvania. 5-43

WINCHESTER 70 TARGET SWIFT, PRACTIcally new, shot little with sub-loads only, exceptionally accurate, cases, $115.00. Winchester Single Shot 25-35, excellent, Lyman 5A scope, cases, $45.00. F. P. Wilson, Roxbury, New York. 5-43

PERFECT WINCHESTER 75 TARGET, NO IRON, new improved 29-S Weaver in B mounts, sling, 200 ammunition, $50.00. Gerard (K) 4X hunting scope with special rings and Redfield Jr. base for M-70, optics perfect, bluing good, $50.00. Excellent Camp Perry, B. & M. rod, 200 ammunition, $45.00. C. F. Hober, Belmont, N. Y. 5-43

WINCHESTER 21, 12-32 FIELD, V.G. OUT, perfect in, $75.00. Winchester 70-06, 48 sling, excellent, $110.00. Remington Automatic 12-30 rib, perfect, $75.00. Scott 12-30 F. & F. perfect, $250.00. Winchester 52, standard barrel, case and accessories, V. G. out, perfect in, $60.00. Krag 30" Special barrel, V. G., $30.00. Russian 30", excellent, $20.00. S. & W., M. & P. 4", 38 Special, perfect, $50.00. Colts Camp Perry, excellent, 500 cartridges, $45.00. Colts .45 Automatic, V. G., $40.00. Mauser 98 Actions, $20.00. Winchester loading tool, 30-40, $5.00. 30-40 Krag, 180 & 220 grain F.M.J., perfect, $1.70 box 20. Winchester S.S. Hi Side, $20.00. WANT—Large rifle primers, shotgun wads. Varminter dies. Herman Treptow, 209-11 South Main St., Milltown, N. J. 5-43

NATIONAL MATCH COLT, APPEARANCE very good, otherwise excellent, 260 cartridges, 4 clips, $75.00. Remington Sportsman, 20 gauge, 28 inch modified, perfect, $80.00, Shells extra. Joseph Stashak, 16 N. 2nd Avenue, Manville, New Jersey. 5-43

303 ENFIELD, AS ISSUED, VERY GOOD OUT, serviceable in, 85 cartridges and sling, $32.75. 7.62 Russian, sporter, open sights, Bishop stock, excellent, $29.50. 6mm. Lee-Winchester, sporter, open sights, good, $16.00. 41 Swiss-Vetterli, good, $7.50. .58 caliber Colt's rifle and bayonet, factory new, excellent for muzzle loaders, $21.00. 38 Forehand hammerless, poor, 45 cartridges, $6.25. .32 Colt, rim-fire, good, 35 cartridges, $11.00. .38 Colt A.C.P., good, automatic, 20 cartridges, $19.00. Kit S. Kapp, 6502 Salem, Cincinnati, Ohio. 5-43

RANGER 50, HEAVY BARREL, .22 TARGET, scope blocks, iron sights slightly altered, excellent, $22.00. B flat metal clarinet used 6 months, like new, $30.00. Savage '14 Model, .22 slide action, poor, $5.00. WANT—23 Hornet or .30-'06; also Hornet and .30-'06 reloading tools. George Dameron, Member, 534 N. Main, New Castle, Indiana. 5-43

CASE .22 L.R. AND SHORTS, MODEL 90 WINchester, $200.00. 12 gauge, Model 12, Winchester, excellent, case shells, English Setter, excellent, $135.00. 410 Winchester Pump, excellent, 6 boxes 3" shells, $50.00. Dynamic Microphone stand pedestal, perfect, $45.00. Trade for 52, 37 what? Loren Mitchell, Olney, Illinois. 5-43

ORIGINAL COLT WOODSMAN 6½", PERFECT in excellent out. Plus pointer grips, gold hunting target sight, spring shoulder holster and special made box. $67.00. James Barker, North Ogden, Utah. 5-43

COLT WOODSMAN, 4½ INCH, BERDON trigger adjustment, excellent, except finish shows wear, $45.00. Colt Officers Model H.B. .38 Special, perfect, $60.00. Webley Senior Air Pistol, .22, perfect, pellets, darts, $25.00. J. Duffy, 1321 Delafield Place, N. W., Washington, D. C. 5-43

SELL OR TRADE

.38 SMITH & WESSON M.P. TARGET, INside perfect, $65.00 or Colts Woodsman Target. Byron Sullivan, Washington, Illinois. 5-43

HI-STANDARD MODEL B, GOOD, $30.00. KRAG Sporter, Bishop cheek rest stock, Pacific peep, 40 rounds Remington ammunition, $42.00. WANT—Winchester M-70 or Remington 720 in 257 or 270; reloading tools for same; primers; short Mauser action, etc. O. J. McNiece, 947 Indiana Ave., Venice, Calif. 5-43

WINCHESTER LEVER 1886, 40-65 HALF-OCTAgon barrel, perfect in, good out, sixty late factory shells, $30.00 or trade on 70 Hornet or 70 257 Roberts. Paul Bossemeyer, 830 State Life Bldg., Indianapolis, Indiana. 5-43

FOR SALE: PARKER DHE, 12 GAUGE, skeet single trigger, solid rib, pistol grip, excellent in and out, $187.50. Parker CHE, 12 gauge, trap, double trigger, solid rib, straight grip, excellent in and out, $195.75. Parker SC, 12 gauge, trap, single barrel, ventilated rib, single trigger, straight grip, Morgen recoil pad, excellent in and out, $187.50. Trade for guns, cameras, or cartridges. Warshal's, First and Madison-BB, Seattle, Washington. 5-43

.38 SPECIAL COLT OFFICIAL POLICE, 5 INCH barrel, perfect with 400 factory loads. Sell $65.00 or trade for 30 and 45 components. R. Shively, 134½ E. George St., Marion, Ohio. 5-43

FOR SALE OR TRADE: TWO LOTS IN PORT Angles Wn., have abstract; will trade for .30-06 Springfield Sporter, model 70, or highly modernized Enfield in excellent condition; good Pocket Watches to trade for guns, .30-30 hand loading tool, .30-30 S.P. bullets or ammunition, .380 Colt Auto, .38 S. & W. Special with 4" barrel in excellent condition. Have for sale, Camp Perry Model .22 Pistol, 10" barrel, with fine sheep lined holster in excellent condition, $50.00. E. A. Jerome, 556 Pearl Street, Eugene, Oregon 5-43

SAVAGE, 720, 12X28, POLYCHOKE, PERFECT, fired 50 times, $70.00. WANT—Winchester Model 12-20, solid raised rib, perfect, and shells or etc. David G. Davis, Route 3, Box 21, Kirkland, Washington. 5-43

SALE OR TRADE—COLT .25 AUTOMATIC, perfect, $22.00. WANTED—Revolver or pistol, military or sporting rifle, binoculars, air rifle, camera. Describe and price. E. A. Bastel, Prairie du Chien, Wisconsin. 5-43

L. C. SMITH FIELD 12X28, EXCELLENT, $60.00. Remington M11 Automatic 12X28, perfect, $62.50. Winchester M1907SL .351 Caliber, perfect, $65.00. Savage 99F .303, fair, $28.00. Savage 99RS .300, excellent, $75.00. Colt Frontier .45 Caliber, 7½ inch barrel, reblued, good $35.00. Colt Police Positive Target .22 L.R., perfect, $35.00. Many others. List. Stamp. Ed Howe, Coopers Mills, Maine. 5-43

PERFECT COLT POLICE POSITIVE, 2" BARrel, $40.00. .38-40 Colt Bisley, 4-¾" barrel excellent mechanically, good outside, better than fair inside, 50 cartridges, $35.00. A-1 Course in Finger Printing and Ballistics, corrected exams., tools, etc., $25.00. .32 cal. S. & W., nickel, good in and out, mechanically perfect, $30.00. WANT—Match Target. A. L. Terhaar, 6425 Cross Street, Jacksonville, Fla. 5-43

BUSCH TERLUX 24X54 BINOCULAR, CASE, $200.00 cash; Contax III; or latest Auto Graflex and Accessories. Trade—99mm Elmar Telephoto for 153mm lens for Ektra. Howard Keene, Kittery, Maine. 5-43

SELL OR TRADE—PERFECT .22 O.M.T., $60.00 or trade for 70 .30-06 or what? Herbert Knapp, West Unity, Ohio. 5-43

WILSON OFFERS EXCELLENT AINSLEY H. Fox 12 Gauge 32" F. & M., automatic ejectors, Krupp barrels, beavertail, a Philadelphia Fox, $150.00 or trade for other guns. Wilson's, 3082 West 25th Street, Cleveland, Ohio. 5-43

COMPLETE CYLINDER AND TARGET BARREL for .44 special S. & W., $20.00. C. L. Eimer, 1106 Sergeant, Joplin, Missouri. 5-43

20 GAUGE STERLINGWORTH EJECTOR, OLD but tight, $35.00. No. 2 Ithaca 12 Ejector, perfect, $90.00. Trade—2-¾ cases 20 Gauge Shells. WANT—12 or 16 Gauge Shells and 16 Gauge Double Ejector. R. P. Haun, Central Hotel, Ballinger, Texas. 5-43

EXCELLENT WINCHESTER .300 MAGNUM, white line pad, 57-W rear, sling, 14½ boxes shells, shot only 10 shots, $132.00 for all. Bisley .357, New 5½" barrel, cylinder, working parts, frame blue worn, 200 .38 Special cartridges, holster, $50.00. Remington 12-30 full automatic, shot 25 shots, as new, $65.00. 3# Hi-Vel, 3# 4064, 4 cans #6, 1200 #120 primers, 400 #1, all for $35.00. WANT—16 or 20 Automatic, prefer Browning, rib, full and shells. 8 mm. B. & H. Aristocrat or Bolex; K-22; Match Target; Hi-Standard D or E or 8mm Film. Stamp please. Amos C. Wells, R.F.D. #4, Albany, Oregon. 5-43

BRAND NEW .30-06 WINCHESTER ENFIELD Rifle Barrels, $9.75 each, or trade for Pistols, Rifles or what have you? WANT—Perfect .38-44 S. & W. Heavy Duty, Colt Ace or S.&W. Kit Gun. Emil McConnell, Route 6, Mine Hill, Dover N. J. 5-43

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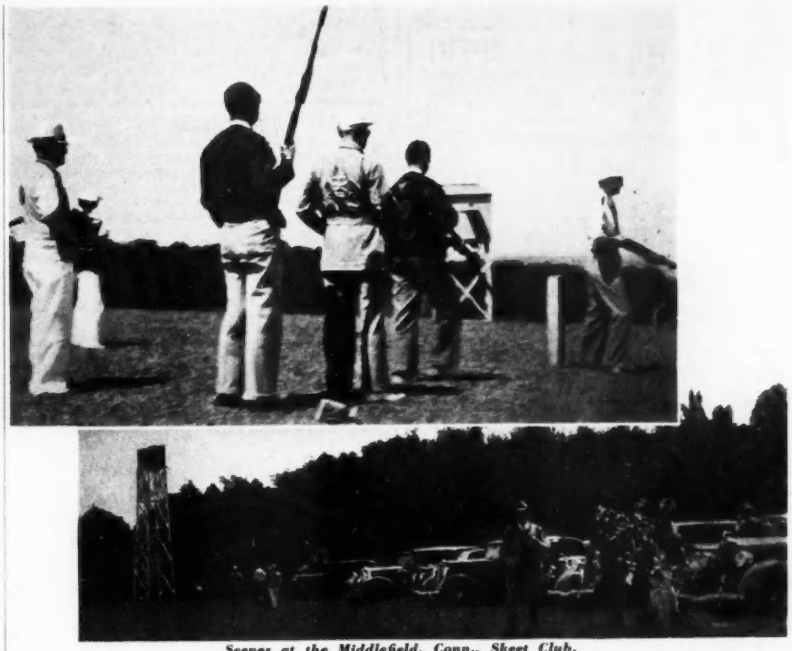

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KRAG, .22 INCH. LYMAN RAMP, IVORY BEAD, Lyman 48 rear, sling, perfect bore, $50.00. Stevens .410 Overunder, perfect, $25.00. Prefer Antique or Rare Guns and Shells, Percussion Revolver. Miller Bedford, New London, Ohio. 5-43

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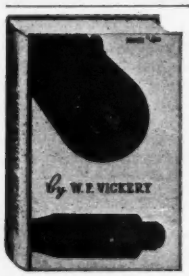

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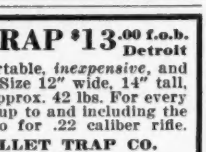

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ISSUE LEBEL WITH BAYONET; 7.62 RUSSIAN Sporter, Government shortened, Pacific peep. Both perfect, unfired, $30.00 each. Trade both for Colt National Match .45 Automatic or National Match Springfield "C" stock, above #1,000,000, each perfect. Carson Williams, Parkland Hospital, Dallas, Texas. 5-43

REMINGTON AUTOMATIC, 12x30, MODIFIED, perfect, $65.00. Browning Automatic, 12x26, improved cylinder, perfect, $70.00. H. & R., single, 12x30, full, perfect, $15.00. Winchester 94 carbine, .30-30, half magazine, special sights, perfect in, bluing worn out, $45.00. Cartridges extra. WANT—.22 target pistols or revolvers. N. M. George, Box 206, Riverhead, N. Y. 5-43

FOR SALE OR TRADE: M-63 WINCHESTER Speed-King, V.G. or better, Lyman tang rear sight, sling and swivels, $35.00. WANT—Remington Speed-Master, M-241, .22 L.R., V.G. or better. Member. M. E. Timmons, 422 Vine Street, Kenton, Ohio. 5-43

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WILL TRADE—800 WESTERN 60 GRAIN OPEN point .25 caliber bullets for equal number .22 Varminter bullets. WANT—250-3000 cases. Paul Prosch, 5 East Sherman, Hutchinson, Kansas. 5-43

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TRADE—COMMERCIAL .45 AUTOMATIC, EXcellent, and .45 Government Automatic, good; for .22-45 floating chamber conversion unit with Late Model Commercial .45 A.C.P. Or will trade .45 Government Automatic for .22-45 unit. Don Breckenridge, 310 State, Alma, Michigan. 5-43

TRADE—.22 LONG RIFLE AMMUNITION, late .30-'06 issue ammunition. WANT—large and small rifle primers, .22 jacketed bullets. E. Larralde, 4800 Hampton Road, La Canada, California. 5-43

TRADE—.38 HOPKINS-ALLEN, NICKEL, 5" barrel, good, holster. American Rifleman magazine since March 1942. WANT—1,000 .22's L.R. Kleanbore. John Michel, Jr., Ideal Service Station, 1225 Magie Ave., Elizabeth, N. J. 5-43

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TRADE—500 REMINGTON #8½ N.M.N.C. Primers in sealed packages for 500 Remington #6½ or 500 Winchester #116 in sealed packages. TRADE—500 Rega .257 bullets 70 grain for 500 Hornet bullets 40 or 50 grain, soft point or hollow point. Also want Hornet dies, etc., for Schmidt #12 tool or other loading tools. Max Adams, 1229 So. Home Ave., Berwyn, Illinois. 5-43

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WANTED—9.3x64 MAUSER; .35 NEWTON OR Whelen; .350 G&H, .475 No. 2. G. Jacobsen, 2121 So. 18 E., Salt Lake City, Utah. 5-43

WANTED—K22 OR MASTERPIECE, WOODSMAN or Hi-Standard "D", 4½" bbl., .22 cal. ammunition. Excellent or better. Member. E. Robert Hand, 3221 Palmetto Dr., Tampa, Fla. 5-43

WANTED—FOR CASH. AMMUNITION, any quantity, all calibers. Write Public Sport Shops, Dept. R-60, 13 S. 16th St., Phila., Pa. 5-43

WANTED—COLT SERVICE MODEL ACE WITH floating chamber. Must be in new or perfect condition. Ivory or stag grips preferred. Inspection privileges. Wm. A. Villwock, 735 Bunkerhill Rd., Colonial Lakelands, Trenton, New Jersey. 5-43

WANTED—COMMERCIAL CARTRIDGES .270-100, 130 grains; .30-06-150, 172, 180, Issue. Describe load fully. State price, quantity. S/Sgt. George Stidworthy, Post Garage, Fort Dix, N. J. 5-43

WANTED—MT WOODSMAN AND B.L. PRISMAtic Spotting Scope Army Use. Major H. D. Taylor, 1805 Fifth Ave., Seattle, Wash. 5-43

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WANTED—EXCELLENT TO PERFECT SUPERTargetspot or 1½ inch Unertl or 2 inch Unertl scope. Lyman all Weather Alaskan steel tube. Colt National Match and high grade custom .22 Target outfit on late 52 action; both excellent or perfect. D. S. Hopkins, E. 831, Rockwood Blvd., Spokane, Wash. 5-43

WANTED—7.62 RUSSIAN AMMUNITION. ALSO want Krag Rifle or Carbine. State condition. All replies answered. Erl Svendsen, 1151 West Adams Street, Chicago, Ill. 6-43

WANTED—THOMPSON SUB-MACHINE GUN, condition immaterial. Instruction purpose only. Lt. William Anderson, 59th Inf., Camp Beale, Calif. 5-43

WANTED—AUTOMATIC PISTOLS, .22, .32, and .45 caliber. Warshal's, First and Madison-BB, Seattle, Washington. 5-43

WANTED—M2 SPRINGFIELD CALIBER .22; Winchester 52 Standard; S&W 1917 Caliber .45, Excellent or better. H. E. Miles, 913 San Jacinto Bldg., Beaumont, Texas. 5-43

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WANTED—WINCHESTER 52, STANDARD BARrel, with sights and sling. Must be excellent condition. Write description and price. R. A. Elliott, Middlebury, Vt. 5-43

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WANTED—REDFIELD JR. MOUNT FOR 70 Winchester, reloading tools for Kilbourn Hornet and .30-06, also components. Wayne McCarney, York, Pa. 5-43

WANTED—ACCORDION FOR CASH OR will trade for guns, ammunition, etc. Scaramuzzo & Sons, 604 Blue Island Ave., Chicago, Illinois. tf

WANTED—LYMAN ALASKAN SCOPE, MUST BE optically perfect. Clair Patterson, Box 63, Homer City, Pa. 5-43

WANTED—COLT .45 OR 44-40 SA 7½ OR longer, smooth bore by Bud Dalrymple, with cartridges. R. A. Leeson, 10 High St., Boston, Mass. 5-43

WANTED—ZEISS ZIELVIER STANDARD OR Hensoldt Dialytan, new or excellent. Mauser DST, high grade action, plain or engraved. T. K. Lee, Birmingham, Alabama. 5-43

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WANTED—KODAK METALIST. WILL pay top price for good clean camera in perfect condition. M. A. Hogan, 201 S. Main St., Ann Arbor, Michigan. 5-43

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WANTED—8½, 9¼ PRIMERS, .220 SWIFT bullets, 46, 48 grain, 87 grain .25 caliber bullets. W. S. Tanksley, Bristol, Virginia. 5-43

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WANTED—.38 S. & W. SPECIAL CASES TO fit large primers. 5000 or part. Quote price and describe. Badly needed for defense training. Robert Taylor, Police Department, Long Beach, California. 5-43

WANTED—.45 COLT GOVERNMENT MODEL Automatic, Springfield .30-'06, .45, .38 and .30-'06 ammunition. Also a good Air Pistol. Roland Noyes, 21 Cabot Street, Salem, Massachusetts. 5-43

WANTED—LOVELL BULLETS; 4198, 4227; primers; Standard Swift; top prices for these items. 15X Super Targetspot or 2 inch Unertl. Will pay $120.00 for 10,000 or any amount of .22 Long Rifle, no Hi-Speed, sleeping bag, air mattress. Frank Rachetto, 86731 Rutland, Detroit, Michigan. 5-43

WANTED—MODERN AND OBSOLETE Cartridges, all sizes. Send list for quotation. Ed Howe, Coopers, Mills, Maine. 5-43

WANTED—CASH TRADE. 52 SPORTER; .30-'06 Sporter Springfield as issued; M-21 Skeet; M-21 SST 3" Chambers; National Match .45; .22 Conversion Unit, .25 Auto; Bankers Special .22 or .38; Model HE 4½"; have excellent Savage Lightweight Model 745 26" barrel with compensator and recoil pad; also MT Woodsman 6½". Major John A. Wester, 5212 Ravenna Avenue, Seattle, Washington. 5-43

WANTED—PERFECT .357 MAGNUM S. & W. 6 or 6½" barrel; also .22 Hornet and .351 Winchester Automatic cartridges. For personal use not resale. Member. R. A. Burnside, 610 Equitable Bldg., Des Moines, Iowa. 5-43

WANTED—FRONT SIGHT INSERTS FROM Lyman #17-A and #77 front sights. Mail me the inserts you are not using. Will pay 10¢ each. W. P. Klapp, Paoli, Pennsylvania. 6-43

WANTED—COLT OFFICER'S MODEL .22 IN very good or better condition. Harry Spangenberg, 1632 South 25th Street, Milwaukee, Wisconsin. 5-43

WANTED—FOR CASH. COLT OFFICERS Model, heavy barrel, excellent to perfect. Want examination privilege. N. A. Brown, Box 314, Stanfield, Oregon. 5-43

WANTED—ROSS SCOPE VARYING POWER 1¼ to 4X, Zeiss 2¼X late model, Noske 2¼X U.M.C. 145 grain bullets. L. H. Wolcott, 914 8th Street, Las Vegas, N. Mex. 5-43

AMMUNITION WANTED, SMALL OR large quantities: .30-30; .32 Special; .35 Remington; .30-06; .300; .22's. Send description and best cash price. The Jaymac Co., Jackson, Mich. tf

WANTED—SEVERAL 513T URGENTLY NEEDED for Small Arms School. State price and condition. Harold Taylor, Maquoketa, Iowa. 5-43

WANTED—THREE BARREL GUN, 12 GAUGE full or 1 modified with 30/30 rifle, 30 inch barrels preferred. Sauer, Daly or equivalent make. State condition. E. W. Long, Box 407, Mobile, Alabama. 5-43

WANTED—1500 JACKETED BULLETS, also complete rounds, for Hornet; write stating number, type, weight and price. Paul W. Klipsch, Southwestern Proving Ground, Hope, Arkansas. 5-43

WANTED—COLT MATCH TARGET WOODSman, Case for HB Winchester 52, 22 I.R. Ammunition, for cash. Bert Lee, 23 Bramback Avenue, Scarsdale, N. Y. 5-43

WANTED—20 GAUGE AUTOMATIC OR PUMP, Woodsman or Hi-Standard 4½". Also ammunition, 12 gauge, 20 gauge, 30-30 and 22 L. R. J. I. Falconer, Scottville, Mich. 5-43

AMMUNITION, ALL TYPES WANTED. State condition, age and caliber. Highest prices paid. Make offer. Stoeger Arms Corporation, 507 Fifth Avenue, New York, N. Y. tf

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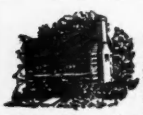

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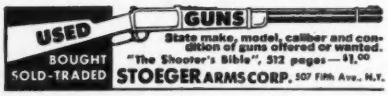

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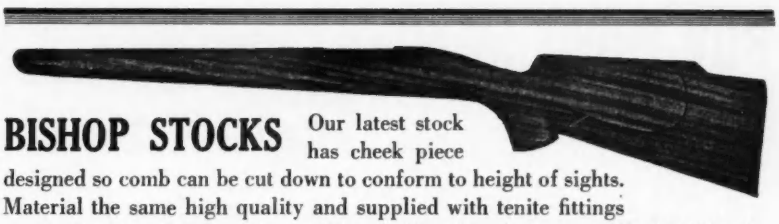

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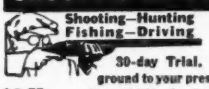

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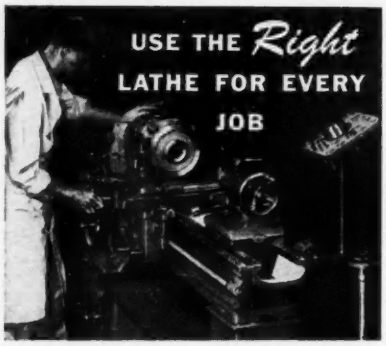

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LARGE ASSORTMENT ANTIQUE ARMS. Many Colts and Military pistols. Special listings to those who advise wants. Wm. M. Locke, 3607 Ault Park Road, Cincinnati, Ohio. 5-43

ILLUSTRATED CATALOG OF ANTIQUE Pistols, Rifles, Swords, Rapiers, Daggers. Armor; 25c. Robert Abels Shop, 860 Lexington Avenue, New York. 5-43

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SHOT GUN COVERS, ALL LENGTHS, $1.00. Precision Barometers, values up to $12.00. Brand New, Special Sale, $4.95. Household Thermometers, new 75¢ value. Brand New, 25¢. Physicians' Thermometers. Pocket Style with case, Brand New, 3 for $1.00. Gun Oil, 1-oz bottles, 15¢ each, $1.50 per dozen. Public Sport Shops, Dept. R-60, 13 S. 16th St., Philadelphia, Pa. 5-43

SUPERWAX PRESERVES, WATERproofs canvas, rope, leather goods. Waxes skis. Finishes wood. Prevents rust. 1½ lb. cake, $1.00. Circular free. Superwax, Box 1492-V, Milwaukee, Wisc. 5-43

SALE OF SURPLUS GOVERNMENT Goods. Whelan Oiled Rifle Sling, 1", brand new, $1.50. Whelan Rifle Sling Straps 1¼" brand new, $1.65, Swivels 75¢ per pair. Springfield Sight Gauges, $1.00. .30-06 Empty Brass Cases, 75¢ per hundred. Empty Cases .38 Special chrome finished cases for small primer, shot once, 75¢ per 100. Brass Clips for .30-06 Cartridges, $2.00 per hundred. Canvas Canteen Covers, fine condition, 25¢. U.S. Army Military Haversacks, fine condition, 60c. U.S. Army Web Shell Belts, wide, with metal holder, 75¢. Public Sport Shops, Dept. R-60, 13 S. 16th St., Philadelphia, Pa. 5-43

SHOTGUN SHELLS. 16 AND 20 GAUGE Cases, new primed, $5.00 per 100. New high brass base Winchester 3 in. 10 Gauge, $6.00. Wads, cards, etc. New 10 and 20 Ga. brass primed cases, 25¢ each. #4 and #6 Primers, $7.50 per M. 12, 16, 20 Ga. Hand Loading Tools with adjustable shot and powder measure, $5.00 set, each calibre. Money orders, stamp please. J. Hendrick, 825 W. Evergreen Ave., Chicago, Ill.

WINCHESTER MODEL 54 STOCK, EXCELlent, $8.00. Winchester Model 70 Stock, Excellent, $10.00. Parker Shot Gun Barrel 12 Ga. Hammerless Whitworth Steel, 30 inches in full and modified with ejectors and fore-end, perfect. $75.00. Public Sport Shops, Dept. R-60, 13 S. 16th St., Philadelphia, Pa. 5-43

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50,000 PERCUSSION REVOLVER CAPS. #11, $2.50 per 1,000. Public Sport Shops, R-60, 13 S. 16th St., Philadelphia, Penna. 5-43

PATENTS

PATENTS—LOW COST, EASY TERMS. Book and information free. Highest references. L. F. Randolph, Dept. 370, 416 5th St., Washington, D. C. tf

RECEIVED TOO LATE TO CLASSIFY

WANTED—.30-'06 RIFLE WITH POPE BARREL; Krag with Stevens-Pope barrel or barrel only; Winchester Model 70 Rifle, .30-'06; S. & W. .357 Magnum. Olaf Otto, Jr., USMC Box 180, Savannah, Ga. 5-43

TRADE—2 PERFECT JONAS 1939 KODIAK Bear Rugs, open and closed mouth. Also Skull Ashtray. WANT—Outdoorsman, pay top. E. Gates, 3500 N. Flagler, W. Palm Beach, Fla. 5-43

LATEST 52 HEAVY BARREL TARGET RIFLE, 2M EZXS, perfect, $75.00. Lyman Alaskan, excellent; trade for 8 or 10X Target Scope. WANT—Lovell. Edward Rosecrans, 59-35 157th St., Flushing, N. Y. 5-43

WANTED—KRAG, SPRINGFIELD 45 C.A. Ammunition, M.C. Gov't. State age, condition, price. Flaig's Hunters Lodge, Millvale, Penna. 5-43

MOSSBERG MODEL 46B, MOSSBERG RANGE-finder, scope, special stock, sling. 5 boxes cartridges. Excellent, $30.00. J. Bennett, 55 Wallace St., New Haven, Conn. 5-43

FOR SALE: 4¼" WOODSMAN, PERFECT, $60.00; Smith and Wessons-Kit Gun, perfect, $50.00; .22-32, perfect, $50.00; K22 Masterpiece, perfect, $75.00; .38-44 Outdoorsman, perfect bore, bluing slightly worn, $60.00; .44 Military Target, very good, $45.00; latter 3 with Magna stocks; High Standards "HE" 6½", excellent, $50.00; D 6½", very good, $40.00; 7.62 Russian, bore perfect, lower band and ramrod missing, $15.00; Stevens .22 Offhand, very good, $15.00; B. & L. Drawtube telescope with Mossberg stand, $30.00; B. & L. Rayban glasses, $12.00; case 12 gauge Remington Skeet loads, $30.00. Olaf Otto, Jr., USMC Box 180, Savannah, Ga. 5-43

416 STEVENS, REDFIELD, 17A, SLING, BLOCKS, excellent, $25.00. WANT—.22 O. M. T., 52 Sporter, 52 Standard, excellent to perfect. Ray Guthrie, 342 W. Campbell, Roanoke, Virginia. 5-43

CONTAX II, TESSAR 2.8, EVER READY CASE, excellent, $190.00; Sharps Borchardt Long Range Target, walnut panels, original sights, unaltered, .45, 2-4/10 case, excellent in, V.G. out, $60.00. WANT—Gibbs .303 Farquharson, Short Mauser, Stevens 44½. F. F. Tubbs, 3647 Lilac, Lansing, Michigan. 5-43

COLTS POLICE POSITIVE .38 SPECIAL, BARrel 6", ivory, bore perfect, very good out, $38.50. 8X30 French Binocular, excellent, $42.50. T. H. Turner, Seaford, Del. 5-43

CUSTOM WINCHESTER, SINGLE SHOT, MAGnum Hornet, heavy barrel, blocks, tools, perfect, $75.00. .417 Walnut-Hill, scope blocks, perfect, $48.00. Winchester 52 heavy barrel, Marksman stock, Lyman 77 and 48, $75.00. Winchester M69 Target Rifle, fully equipped, $25.00. Charles Russell, 4301 West 210th Street, Rocky River, Ohio. 5-43

WANTED—WILL PAY $65.00 for a Colt Ace in perfect condition; prefer with floating chamber. Elmer C. Bentsen, P. O. Box No. 212, McAllen, Texas. 5-43

WANTED—BRASS .30-30, .30-40, .45-60, .45-70. Moulds 308329, 308334, 456191, (300 grains). 10 and 12 gauge primed shot shells (black powder), shot. R. B. Stevens, 1917 W. Olympic, Los Angeles, Calif. 5-43

MODEL 70 WINCHESTER .22 HORNET. SUPER Grade, open sights, with A-5 Telescope, $125.00; without telescope, $100.00. Perfect condition. 100 Cartridges included. Frank H. Chandler, Shelburne Falls, Mass. 5-43

L. C. SMITH 12 GAUGE, FIELD GRADE, 26 inch barrels. Like new except for several screw heads marred. Two boxes shells, $60.00. Laurence George, Plainfield, Ill. 5-43

EMBLEMS-BRASSARDS. STANDARD OR your own design. Write for sample. George O. Wood, 124 Ontario Street, Lynn, Massachusetts. 5-43

WANTED—ALASKAN ALL WEATHER AND 330 Weaver; Argus Spotting Scope. 70, '06 deluxe preferred. TRADE—B. & L. 6X30 Binoculars, I.F., glass good, outside worn, no case; for what? N. L. Hubbard, 628 Hollibaugh, Akron, Ohio. 5-43

WANTED—FOR CASH: ONE 10X1⅛" FECKER or 1" Unertl. Give condition and prices. C. S. Dearmin, 1269 Sherman Street, Akron, Ohio. 5-43

WANTED—MODEL 37 OR 52 HEAVY BARREL with 10 or higher power Targetspot, excellent condition. Will pay up to $125.00 for combination. Leroy G. Black, Box 378, Trona, Calif. 5-43

HIGH STANDARD 4½", PERFECT, 150 rounds, $45.00. .38 Special Colt P.P., excellent, Franzite grips, 100 rounds, $39.00. .45 Colt Bisley, perfect, holster, 25 rounds, $40.00. .45 Colt Automatic, holster, $55.00, .38 S.W. Special M. & P., $52.50, each perfect barrels and blue, Franzite grips, 100 rounds. J. L. Shull, Tyler, Texas. 5-43

WANTED—EXCELLENT REMINGTON 550 with or without mounted 29S. John Kirkpatrick, Macomb, Illinois. 5-43

WANTED—BARREL ONLY, WINCHESTER M-52, standard weight, late model, perfect; Colt Woodsman, late model, excellent to perfect. R. E. Strickland, Brown-Marx, Birmingham, Alabama. 5-43

52 STANDARD SPEEDLOCKS: ONE WITH LYman 17A front, $45.00; one with 17A and Redfield 100A rear, $55.00; both excellent. Excellent Lyman 5A micrometer mounts and case, $35.00. Excellent .32 Automatic Colt, $35.00. .32-20 S. & W., full ribbed barrel, hard rubber stocks, perfect, $45.00. .38 Colt Automatic Military, very good, extra clip and shoulder holster, $45.00. All guaranteed. Wayne Tripp, 110 W. Galena Street, Butte, Montana. 5-43

TRADE—.22 LONG RIFLE AMMUNITION, 125 caliber bullets; two Ballard set trigger actions; for high grade .22 caliber barrel or blank. Winchester 70, any condition, Scopes, Binoculars, 8S bullets, etc. Earl Price, Lodi, Wisconsin. 5-43

FOR SALE—SOUTH BEND 16" X 8' L.C. LATHE, Faye & Egan 12" x 6' speed lathe, Rockford Sensitive type drill press, assortment drills, reamers and milling cutters, many high speed. All very good. No junk. Prices on request. G. B. Gaumer, 4028 Parrish, East Chicago, Indiana. 5-43

COLT ACE, EXCELLENT, $65.00. COLT .45 Automatic Government Model, perfect, $65.00. 500-45 Automatic Reloads, $15.00. John Manowczak, 849 Bingaman Street, Reading, Pennsylvania. 5-43

WINCHESTER 410 PUMP GUN WITH SKEET and full choke barrel. Skeet barrel, perfect, full choke, very good to excellent, $125.00. Fred Wieland, Mount Gilead, Ohio. 5-43

WANTED—.45 COLT BLACK POWDER AMMUnition. T. Scroxton, 76 South Avenue, Bradford, Pennsylvania. 5-43

WANTED—FOR CASH. ZEISS 110MM. BINOCular view telescope, Zeiss Code Asenglar in good condition. Mail details. D. Whiting, Room 210, 621 S. Hope Street, Los Angeles, California. 5-43

KRAG .30-40, 30 INCH BARREL, CUT DOWN stock, good, $15.00. .30-'06 Newton, scope, peep and open sights, barrel excellent, finish and stock good, $50.00. .32 Special Winchester Carbine, Model 94, good condition, 37 shells, $32.00. Mossberg .22 Single Shot, barrel very good, stock repaired, serviceable, $6.00. Winchester Model 1890 .22 Long Rifle, new barrel, $14.00. R. J. Houtz, Elburn, Illinois. 5-43

WANT—MAUSER, SPRINGFIELD, NEWTON, OR Action, or action parts; Browning O/U. Ted Hildemann, Frenchtown, Montana. 5-43

WINCHESTER M/52 STANDARD, SPEED LOCK, good out, perfect in, standard sights, sling and scope blocks, one 5 and one 10 shot magazine, 400 rounds ammunition, $65.00; Winchester M/54 Target .220 Swift, curly walnut stock with cheek piece. Fecker 3X scope, ¼ minute click mount, no iron sights. Gun and scope excellent in and out. Rifle fired 350 times with light loads and is of superb accuracy. Will sell with dies and shell holder for Pacific tool, 69 cases including 20 new, 21 resized and primed cases, 28 plinking loads 55 gr. Sisk bullets, 100-55 gr. Sisk bullets, 100 primers and 1 pound #4064. $150.00 takes all, no trades, no partial orders. Remington Roberts .257 Model 30-S, 24 inch barrel, speed lock, adjustable trigger, cheek piece applied for scope, no iron sights, 1 inch Whelen sling. This rifle, proven for accuracy, has been fired only 250 times with graphite wads. Condition excellent inside and out except for 3 small stock dents; 950 gas checks, eleven 87 grain bullets, thirty-six 100 grain W.T.C. bullets, seventy-four 100 grain silver tip bullets, fifty Ideal bullets gas checked lubricated, 1 pound 3031 powder, 63 sized and primed cases, 100 primers, resizing dies and bullet seater with shell holder. $125.00 takes all, no partial orders. T. L. Brannan, Box 683, Green River, Wyo. 5-43

440C, CROSSHAIR, T1 OR T2 MOUNT, BRAND new, $30.00; extra mounts, $1.00. WANT—.22 L.R. ammunition. Robert Moores, Owings Mills, Md. 5-43

FOR SALE: JOHNSON-MARTINI HB .22, JOHNson stock, very fine dark figured walnut, minor cracks one side, outside shows a little wear, inside excellent, has shot 1-inch groups, won many matches, Lyman 48 rear, #77 front, $100.00. Remington 37, serial 00705, practically new, Marble-Goss rear, very accurate, $75.00. Good gun trunks (2) $5.00 each. Lyman Super targetspot, some wear outside, optically and mechanically perfect, 20X, $80.00. Unertl 1¼", 12X, Fecker ¼" click mounts, needs bluing, good optically and mechanically, $50.00. Ten-X Shooting coat, Imperial, slight wear, size 40, $5.00. 500 Supermatch II free with each gun. Going abroad. J. D. McNabb, 618 19th St., N. W., Washington, D. C. 5-43

TRADE—REMINGTON SCOREMASTER, NEW, 12 boxes 20 gauge shells, case trap loads, twelves. WANT—Rifle scope, practical 10 or 12 gauge gun, 10 gauge shells, Bee cartridges. Dr. E. W. Eustace, Lebanon, Kansas. 5-43

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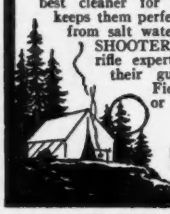

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WANTED—TWO SERVICE OR NATIONAL Match Springfields for training purposes. Fargo Rifle Club, 609 First Avenue, North, Fargo, N. Dak. 5-43

WANTED—SMALL LOTS .22 LONG RIFLE AND .220 Swift cartridges. State price. Del LeVasseur, 110 West A Street, Iron Mountain, Michigan. 5-43

.30-'06 ENFIELD, AS ISSUED, GOOD, $35.00. Krag Carbine, good, $20.00. Remington 37, excellent, sling, Wilder pad, 1000 Super Match cartridges, $70.00. Weaver 29S Scope, excellent, $12.50. Ammunition: 200, .38 Automatic, $7.50; 243, .30-'06 FA33, $14.50; 180, .45 Automatic, $10.80. Money orders only. E. R. Thomson, 23 Pinckney, Greenville, S. C. 5-43

HI-STANDARD B 6¾, EXCELLENT, FLEECE lined holster, $42.50. Western field pump, polychoke, 12 gauge, 5 boxes Kleanbore shells, shell vest, $52.50. M.O. please. WANT—B. & L. 65mm. with stand. Clifford Leighton, 2827 Morton Street, Anderson, Indiana. 5-43

TRADE—PRESS CAMERA, FOCAL PLANE AND regular shutter for 8" Luger, 12 gauge, automatic, .30-'06. F. J. Becker. Somerville, N. J. 5-43

SELL OR TRADE—ITHACA FEATHERLIGHT 12 with Weaver choke, $55.00. R-2 Lovell, $50.00. Stevens 44½, $10.00. Winchester Lo Wall S.S., $10.00. WANT— 52 Slow Lock, target scope, Lovell tools. C. Nieset, Millersville, Ohio. 5-43

B. & M. #28, .30-'06, EXCELLENT, $12.50. WILL buy late model target guns, collections, etc. Almon Williams, Berea, Ohio. 5-43

BELL & HOWELL FILMO 8 PROJECTOR, NEW, $120.00. Eastman Magazine Cine-Kodak 8 Model 90, new, $100.00. Weston Master Cine Model 720 Exposure Meter, new, $25.00. Leonard Goick, Austin, Minnesota. 5-43

FOR SALE: MODEL 99T SAVAGE 300 CALIBER, four boxes shells, 330 Weaver in B mounts, cheek piece and recoil pad, everything perfect, $100.00. R2 Lovell, Krag speed action, Ackley heavy barrel, complete sets tools and components for 700 rounds, Weaver 440 in low springboard mounts, everything very good to excellent, $100.00. No C.O.D.'s. D. L. Parshall, Gaylord, Michigan. 5-43

WANTED—IDEAL #3 RELOADING TOOL WITH muzzle resizing die and double adjustable chamber for .22 Hornet. Also want Hornet cases, 40 or 45 grain jacketed bullets, 6½ primers, Remington or equivalent in other brands. Mason M. Jones, 330 S. W. Sixth Ave., Portland, Oregon. 5-43

HUNDRED MODERN AND ANTIQUE guns for sale or swap. List for stamp. G. Crozier, Adams, N. Y.

WANTED—FOR CASH. BOOKS, GUNS, SCOPES, ammunition, etc. Dr. Samuel Cohl, 33 E. 208 Street, New York City. 5-43

FOR SALE: HUNTER'S DREAM. COMPLETE outfit. Custom built 7mm Mauser by Heym, perfect. Beautiful circassian stock, pistol grip cap, engraved Trap buttplate, Lyman 48 rear, Lyman Alaskan, G. & H. mounts, G. & H. Safety, turned down bolt. Beautiful weapon. 280 rounds 139 gr. and 120 rounds 175 gr. Western factory ammunition, $275.00. No trades, cash or money order. Charles Lawson, 89 Myrtle Ave., Edgewater, N. J. 5-43

FOR SALE: S. & W., .38, M. & P., 6 INCH BARrel, holster and belt, excellent, $47.00. S. & W. Nickel .32 Model 1896, solid frame, swing-out cylinder, 4½ inch barrel with rib, very good, $25.00. Remington nickel Double Derringer, very good, $18.00. Automatic .25 Cal. (6.35 C. Z.), perfect in original box, $15.00. Frederick C. Parshall, Plattsburgh, N. Y. 5-43

SELL OR TRADE: WEBLEY .445, INSIDE EXcellent, outside fair to good, $25.00. Spanish .44, outside good, inside poor, $8.00. Springfield Issue, good except barrel unserviceable, $15.00. TRADE ONLY—Springfield Issue #117,406, excellent in and out. Peters .22 L.R. H.S. .45 automatic ammunition. WANTED—K22, Kit Gun, .45 Automatic comm, short Woodsman, .38 pistol primers. Dr. William G. Farlow, 2170 Chili Road, Rochester, N. Y. 5-43

WANTED—.22-45 CONVERSION UNIT, .45 COLT Automatics, odd lots, .45 automatic parts, left handed regulation .45 holster, cheap handguns, .38 M. & P. S. & W. target, reasonable. Ed Betz, Life Member, 1510 S. Mint Street, Charlotte, N. C. 5-43

WANTED—S. & W. .22 MODEL M LADYSMITH, side-swing cylinder. Describe. V. O. Wahrenbrock, 900 Broadway, San Diego, Calif. 5-43

WANTED—COLTS .22 WOODSMAN FOR CASH. Must be in good shape. State lowest cash price in first letter. Thad Stouffer, Lena, Illinois. 5-43

FOR SALE—MARLIN SKEET KING 410 OVER and Under Model 90 with special select oil finished stock, extra set barrels 410-218 Bee, with Weaver 1X telescope mounted, condition perfect, $125.00. Genuine Frank Hoffman .30-'06 Mauser with extra select Circassian stock, condition perfect, $200.00. 357 Colt Single Action Army, 7½" barrel, adjustable sights, condition perfect, $75.00. .38 Colts Bisley Model, 5½" barrel, condition perfect, $50.00. Jon R. Long, P. O. Box 414, Fort Worth, Texas. 5-43

WANTED—PRIMERS, SHOT GUN #57 Remington or #209 Western, cases, new 12 gauge, primed cases, .30-30, .32 Winchester Special, .348, .270, Hornet Bullets, .30-30, .32 Winchester Special. Jim Clark, 2029 W. Fondulac Avenue, Milwaukee, Wisconsin. 5-43

WANTED—TARGET .22 NIEDNER-MAGNUM R-2 Lovell Varminter components and tools. Must be perfect, describe fully. A. P. Hedlund, 219 Metropolitan Bldg., Minneapolis, Minnesota. 5-43

SALE—NEW REMINGTON 30S, .25 REMINGton caliber, 48 Lyman rear, sling, stock cut slightly near receiver to accommodate S type telescope mount, $65.00. Excellent 54 Winchester, .257 caliber, open rear, 24 inch barrel, bluing worn from butt plate and trigger guard, stock slightly marked, $65.00. Excellent .38 Special, Police Positive Special, 5 inch barrel, $45.00. R. T. Grabe, Coudersport, Pa.

BROWNING 12 GAUGE AUTOMATIC, VERY good, with four boxes of Super-X, $55.00. Royal Deluxe Portable Typewriter, late model, excellent, $47.50. Haenel Air Pistol, .22 caliber, good, $10.00. K. K. Knight, Quaker City, Ohio. 5-43

TRADE OR SALE—256 NEWTON D.S.T., GOOD, 175 cartridges, $50.00. Trade for 54 or 70 Hornet or Roberts. J. R. Thompson, Burt, Iowa. 5-43

BROWNING AUTOMATIC, 16, POLYCHOKE, new, $75.00. ¾" Fecker, Lee dot, click mounts, new, $55.00. B. & L. Drawtube 19½X, sheepskin case, almost new, $30.00. 5 H.P. Johnson Twin, almost new, $90.00. Write for details. WANT—1⅛" or 1¼" Target scope. B. & L. or Argus 50mm. scope. Chuck rifle. Trades. M. J. Lowen, 260 Sedgwick Ave., Yonkers, New York. 5-43

TRADE—BROWNING 16 GAUGE AUTOMATIC, very good with 10 boxes H.V. shells, No. 4, 6, and 7½ shot. WANT—Winchester 70, .270 or .257. Remington 30S, .257 with some ammunition with examination privileges. J. R. Dean, Chilocco, Oklahoma. 5-43

COMMERCIAL .45 AUTOMATIC, EXCELLENT in, slight rust outside, fired 50 times, $50.00. Another Govt., fair, $40.00. Colt 1917, poor, $25.00. Winchester 61, perfect, never fired, 500 Long Rifle shells, $40.00. Ward Western Field Automatic (Mossberg) with internal adjustment scope, all excellent with 500 Long Rifle, $37.50. .45 Automatic shell, 5 cent each, .30-'06 same. R. S. Cook, Alpena, S. Dak. 5-43

WANTED—8MM AMMUNITION FOR LEBEL Army Rifle, any grain, no cracks. Russell Starn, 624 Duryea, Raymond, Wash. 5-43

LATEST 52 STANDARD, MARKSMAN STOCK, Speedlock, 17A, 48WJS rear, barrel tapped for Weaver 330-C and B mounts, all excellent, fired 200 rounds, $120.00. J. D. Evans, Michigan Ave., Port Jefferson, L. I., N. Y. 5-43

WANTED—LARGE AND SMALL RIFLE Primers, NMNC. Jacketed Bullets, .22, .257, .270, .30-06, almost any grain and quantity. All letters answered. State quantity and price. Geo. J. Hall, 256 No. 11th Ave., Pocatello, Idaho. 5-43

FOR SALE: REDFIELD GLOBE FRONT FOR ⅜ Slot complete, $3.00. RIFLEMAN 1936 to date, $1.50 year. Univex 8mm Movie Camera, 5.6 lens, $10.00. WANT—.38 Special 4¾" Barrel. 4½" barrel Woodsman or High Standard. 116 or 120 fast lens Camera. Earl R. Howard, 78 Pennsylvania, Chilton, Wisc. 5-43

WANTED—SAVAGE 1899 MODEL RS OR EG, calibre .300, or Remington Model 81, calibre .300, very good to new. J. Wickham, 116 Hill, Hermosa, Calif. 5-43

WANTED—LYMAN JUNIOR TARGETSPOT Scope, suitable for use on Springfield Bull Gun. F. J. Birk, Owensboro, Kentucky. 5-43

COLT .32 AUTOMATIC, 5 EXTRA CLIPS, EXcellent, fired 40 rounds, $32.50. J. D. Evans, Michigan Ave., Port Jefferson, L. I., N. Y. 5-43

WANTED—CASH FOR YOUR FINE AND beautiful guns. Hershey's, Orrville, Ohio. 10-43

SELL-TRADE: WINCHESTER 10 GAUGE, Model 01, $40.00; Krag Carbine, $20.00; .45 Army Auto, Model '11, $40.00; Savage Utility, .30-30, 12 Gauge, Combination, $20.00; Pflueger Atlapac 9/0, $75.00; Winchester .32 Self loading, shells, $45.00. E. W. Henke, 559 So. Evergreen Dr., Ventura, Calif. 5-43

WANTED—.32 or .25 Automatic Colt, Mauser or S. & W.; .38 Special, M. & P., S. & W.; 4" barrel; Colt Detective Special; Southerner .41 Derringer; Stevens Diamond Model .22; S. & W. Ladies Model .22; very good or better. Col. P. E. Shanahan, ASC Headquarters, Paterson Field, Fairfield, Ohio. 5-43

WANTED—FOR ACTION ONLY, WINCHESTER 70 or late 54 in .250-3000. Would consider Target Grade 70 in .250 if in good condition other than barrel. Also want Winchester High Side Center Fire Action, preferably engraved with D.S. triggers. J. G. Hodge, 1552 State St., Schenectady, N. Y. 5-43

FOR SALE: STEVENS OFFHAND SIX, EXCELlent, 100 shorts, $16.50. Extra Barrel Browning 12, ribbed, modified, perfect plus, $27.00. Ward's 1905 Catalog, $3.00 or Southerner. E. D. Bray, Newburg, Iowa. 5-43

WANTED—.22 L.R. CARTRIDGES, WILL PAY 50¢ per box; also .30-40 Krag, 180 Grain and .22 Savage Hi-Power Cartridges. Name your price. Paul Carter, Bridgeport, Nebr. 5-43

PRIMERS—HAVE 10,000 #116 WINCHESTER, Small Rifle, will trade even for any make N.M.N.C. Large Pistol, none for sale. A. A. Rawlins, 5543 McComas, Dallas, Texas. 5-43

WILL TRADE .38 COLT ARMY SPECIAL, CONdition good, two boxes shells. WANT—.30-40 Krag Sporter and shells or 300 Savage Featherweight with shells or .250-3000 Savage Carbine with shells. Bill Sweet, 330 Grand Street, Coldwater, Michigan. 5-43

WANTED—EXCELLENT .30-06, 70 OR SPRINGfield N.M., Reloading Tools, Components. Trade or Sell: 7mm Tools; 600 Small Rifle Primers for Large; Winchester 12 Automatic, $5.00; 4" Metal Lathe, $80.00. Grano & Lawrence, 1044 Green Street Circle, Gainesville, Georgia. 5-43

REMINGTON 30-S .25 EXPRESS, REDFIELD micro ¼" 70-RT rear, gold blade front, sling, 180 rounds factory loads, sighted in only, excellent, $78.00. J. D. Evans, Michigan Ave., Port Jefferson, L. I., N. Y. 5-43

TRADE—NEW UNFIRED WINCHESTER 94, .30-30, Carbine, $45.00; for .30-06 of like value. Keith Lechelt, Kennewick, Wash. 5-43

S. & W. 22-32, EXCELLENT, FACTORY BOX, $40.00. Ortgies .32 Auto, good, $15.00. S. & W. .38-3" hammerless, good, $7.50. Winchester #42, .410 full, excellent, slight blemish on receiver, $42.50. Winchester #71 Deluxe, .348, excellent, sling, 2 boxes shells, $70.00. Swiss 41 Issue, excellent, 20 shells, $16.00. Egyptian 43 Issue, good out, excellent in, 20 shells, $12.50. Muzzleloader Double 12 Gauge, good shooting order, $10.00. Benjamin .22 Cal. Air Pistol, perfect, with box ammunition, $13.00. F.O.B. Cashier's checks or M.O. only. M. D. Maxon, 825 Aldine, St. Paul, Minnesota. 5-43

WANTED—LATE MODEL 52 H.B. OR BULL Gun. Bert Young, 320 Lincoln Ave., Attumwa, Iowa. 5-43

COLT CAMP PERRY, EXCELLENT, 10 INCH barrel, $42.50. Colt .45 Automatic, Model 1911, good, $45.00. H. & R. 22 Special, not safety cylinder, $20.00. .45 Colt New Service, 7½", good, $35.00. Savage .32 Automatic, good, $20.00. Mauser .32 Automatic, fair, barrel poor, $18.00. High Standard Model H-B, 4½ inch, better than good, $40.00. Russell Renner, Anaheim, Calif. 5-43

MODEL 12 WINCHESTER 12 GAUGE, 30 INCH, full, excellent, $50.00. Aubrey Camden, Tye River, Va. 5-43

WINCHESTER 21 TRAP, 32 INCH, VENTIlated, beavertail fore-end, S.S. trigger, perfect, $189.00. Same as above, 26 inch Skeet, $179.00. Hershey's, Orrville, Ohio. 5-43

WANTED—REMINGTON .25-20 MODEL 25, AND any amount of ammunition. E. W. Henke, 559 So. Evergreen Drive, Ventura, Calif. 5-43

This is a reproduction of one of the rare Arthur Fitzwilliam Tait dog paintings lithographed by Currier & Ives. One or more of this celebrated series has already appeared in this publication. Others will follow.

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AFTER the war, certainly no one will have earned the right to good hunting better than those who have been fighting for this great American heritage.

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